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Cleveland Special Number

Rock Products

DEVOTED TO

Concrete and Manufactured Building Materials

Volume XIII. CHICAGO, ILL., OCTOBER 22, 1913. Number 4.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributers of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere.
Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La

DEXTER Portland Cement THE NEW STANDARD

Sole Agents SAMUEL H. FRENCH & CO. Philadelphia

UNION MINING COMPANY

Manufacturers of the Celebrated

MOUNT SAVAGE FIRE BRICK GOVERNMENT STANDARD

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

Lime Kiln and Cement Kiln Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO.
Mount Savage, Md.
CAPACITY, 60,000 PER DAY
ESTABLISHED 1841

THE HOTEL UTAH
SALT LAKE CITY

Salt Lake City's new two million dollar hotel

"American Keene Cement" used.

Durability Strength Superiority
USE

"STRONGEST KEENE CEMENT KNOWN"

AMERICAN KEENE CEMENT CO., SIGURD, UTAH

CHICAGO BELTING COMPANY
PURE OAK TANNED LEATHER BELTING

RELIANCE and SEA LION WATERPROOF The two brands of leather belting that represent the best in belt construction. - - Our catalog is yours for the asking.

CHICAGO BELTING CO., 113-125 N. Green Street, CHICAGO
Branches: New York, New Orleans, Portland, Ore., Los Angeles, Cal., Cleveland, Ohio. Tannery, Niles, Mich.

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SPECIAL FEATURES IN THIS NUMBER

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Phoenix Portland Cement UNEXCELLED FOR ALL USES.
Manufactured by
PHOENIX PORTLAND CEMENT CO.
NAZARETH, PA.
Sole Selling Agent, WILLIAM G. HARTRANFT CEMENT CO.
Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO. Ottawa, Ill.

Best Bros. Keene's Cement

"The Plaster That Stands Hard Knocks"

A cement noted for its quality and durability for over twenty-five years. Ideal for all high-grade interior finishing and decorative work. The one plaster that can be guaranteed for finish work on concrete.

Write for "The Inner Wall"

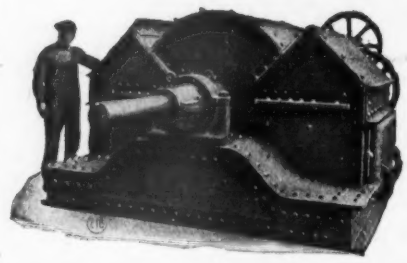
The Best Bros. Keene's Cement Co.

Estab. 1889 Dept. A, Medicine Lodge, Kan.

NEW YORK (40) CHICAGO

"PENNSYLVANIA"

HAMMER CRUSHERS



For Pulverizing Limestone, Lime, Cement Rock, Marl, Shale, Etc.

Main Frame of steel, "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running.

No other hammer Crusher has such a big Safety Factor.

PENNSYLVANIA CRUSHER CO.

Philadelphia

New York Pittsburgh

CANADA CEMENT COMPANY LIMITED — PORTLAND CANADA CEMENT — MONTREAL

MILLS

Montreal	Port Colborne
Hull	Shallow Lake
Belleville	Marlbank
Lakefield	Winnipeg
Calgary	Exshaw

For Prices Any Where in CANADA

Write or Wire Our Nearest Sales Office

Canada Cement Company

LIMITED

Montreal - Toronto

Winnipeg - Calgary

Quality — Service

LEHIGH PORTLAND CEMENT COMPANY — LEHIGH PORTLAND CEMENT — ALLENTOWN, PA.

2000% INCREASE IN 14 YEARS

Capacity 1898, 600,000 Barrels

Capacity 1912, 12,000,000 Barrels

The keynote of this unprecedented growth is the

QUALITY

of

Lehigh Portland Cement

Put Lehigh to any test and convince yourself of its supreme quality.

LEHIGH PORTLAND CEMENT CO.

Main Office ALLENTOWN, PA.

Western Office CHICAGO, ILL.

MEACHAM & WRIGHT COMPANY

CEMENT

CHICAGO

SAYLOR'S Portland Cement — COPLAY CEMENT MANUFACTURING CO. — COPLAY, PA.

Saylor's Portland Cement

Oldest American Portland

Used by the United States Government since 1876

COPLAY CEMENT MANUFACTURING CO.

SALES OFFICES:

Fifth Avenue Building, NEW YORK CITY

1106 Land Title Bldg., PHILADELPHIA

Northwestern Portland Cement

NORTHWESTERN STATES PORTLAND — PORTLAND — NORTHWESTERN — CEMENT — MASON CITY, IA. — CO.

The Reliable Portland Cement

A Portland Cement for the

NORTHWEST

NORTHWESTERN STATES PORTLAND CEMENT COMPANY

MASON CITY, IOWA

WOLVERINE PORTLAND CEMENT CO. — WOLVERINE — PORTLAND CEMENT — GENERAL OFFICES, COLDWATER, MICH. U.S.A.

"WOLVERINE"

The Alright Cement

MADE RIGHT SOLD RIGHT

WORKS RIGHT

WEARS RIGHT

The Best is None Too Good For You. Insist Upon

"WOLVERINE"

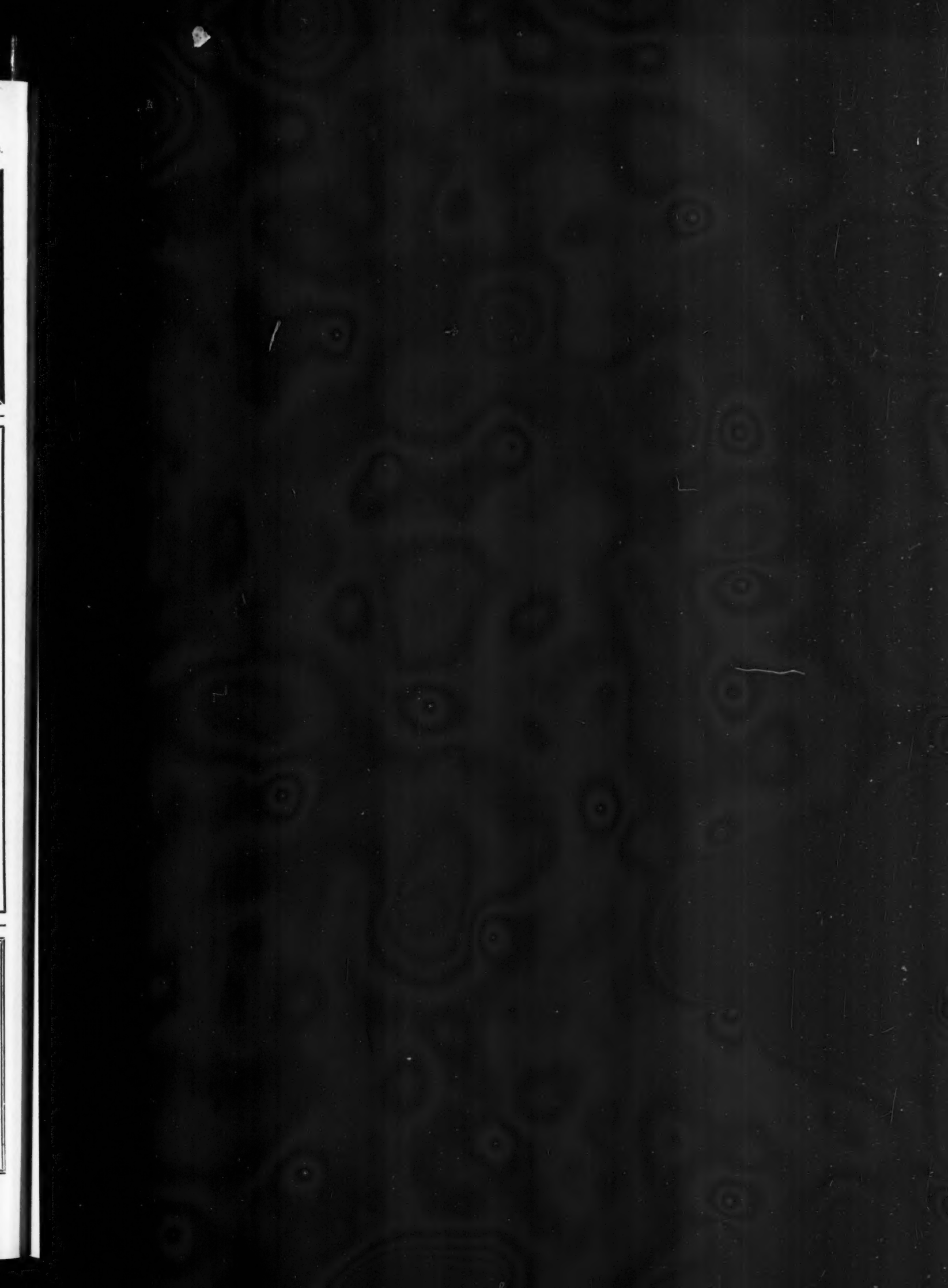
Write for Booklet and Quotations.

Factories at Coldwater and Quincy, Mich. Capacity 3500 Daily.

WOLVERINE PORTLAND CEMENT COMPANY

W. E. COBEAN, Sales Agent, Coldwater, Michigan

Main Office, Coldwater, Mich.



ANNOUNCING ROCK PRODUCTS DAILY—1914 CEMENT SHOW

Rock Products

Publisher's Page

HERE WE TELL YOU REAL FACTS

ROCK PRODUCTS will issue nine (9) Dailies during the **Chicago Cement Show, February 12 to 21, 1914.** These dailies will convey to laymen and those in the industry information as to what is going on at the exposition every day. Without the DAILY ROCK PRODUCTS at a convention or exposition in the industry the "regulars" would feel lonesome, which is another way of saying that ROCK PRODUCTS is indispensable to the trade. The visitor is made welcome by the red blood that permeates each issue of the Daily.

The Object of the Show

The object of the Show is to gather together the forces that have made possible the increased consumption of cement annually from a few hundred thousand to one hundred million barrels. It will be an educator of the architect, the engineer, the contractor, the dealer, and the producer himself of the various aggregates that compose the briquet, the block, the tile, the sidewalk, the reinforced wall, the Lincoln highway, the great dams and other heavy construction which make possible new docks, abutments and bridges. The gathering together of the students who are educating the farmer in the construction of better buildings and enabling him to do better farming and to take better care of his stock, will enliven greater interest in the consumer. The mechanical appliances on exhibit will show the small manufacturer the possibilities of new construction materials, of a kind that will compete with any product in the market today.

Our Need

If there is anything necessary for the enlargement and the broadening of human interest and the creation of a still greater industry, it is the spirit promulgated by ROCK PRODUCTS in every issue, monthly or daily, since its existence—that is, the desirability of co-operation between manufacturer, dealer and architect and on to the consumer, so that when a job is finished it will insure a duplicate order. If the DAILY published in New York and distributed in West Virginia or Vermont brought men to visit that Show, is it not natural to expect that the paper carried away by the shoemaker, the watch tinker, or the teamster who visits the exhibition will enable some other person to drop in the next night and see the wheels go 'round?

A Letter of Credit

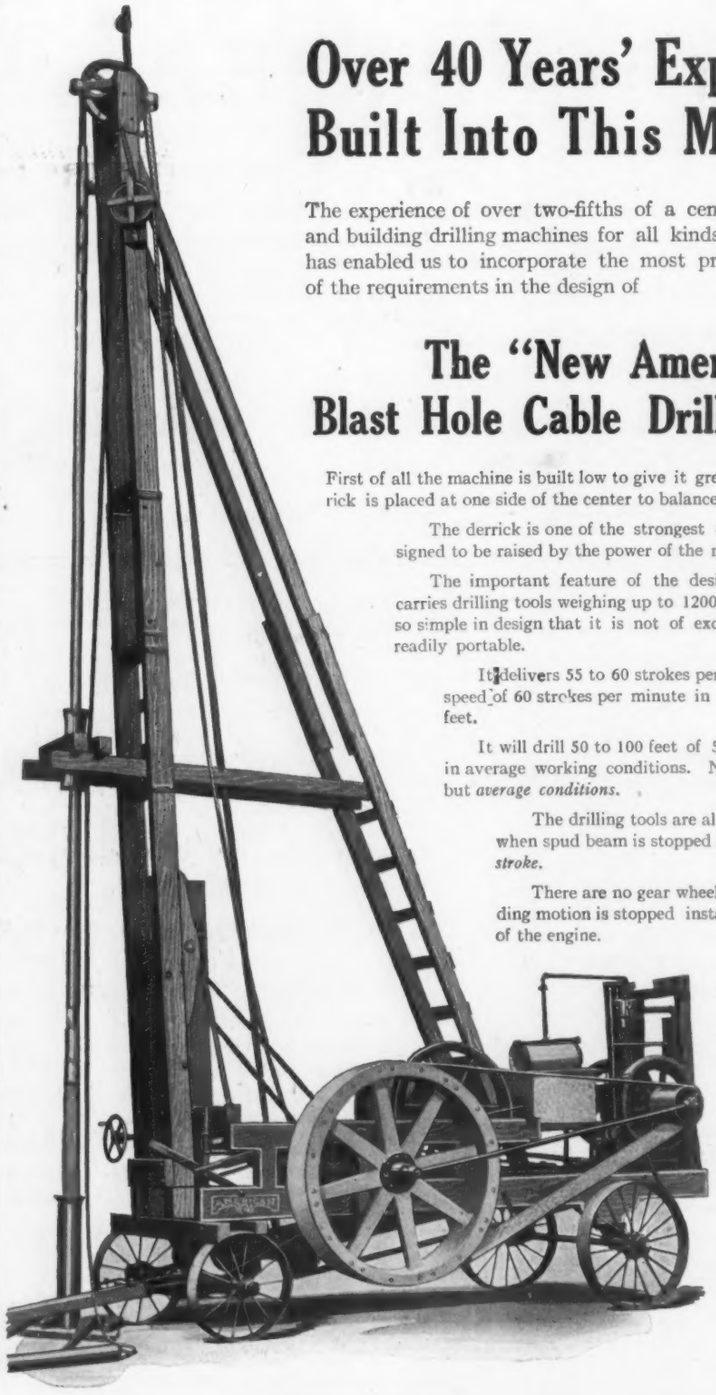
Uncle Sam refused to give the Chamber of Commerce of the United States a letter of credit in the form of a charter, that they might show other countries the progressive spirit which incited the promoters of that organization to form a body that would assist in educating legislators, heads of departments and representatives abroad to carry out the spirit of the government; but ROCK PRODUCTS since its inception has always—during the period that the dailies are published—given a letter of credit to the men who occupy its space, by stating on the back page: "The following firms manufacturing machinery and equipment and producing building materials have been investigated and found by ROCK PRODUCTS to be reliable, and to have such propositions as will yield large dividends to the user."

Quantity and Quality of Our Daily Circulation

The circulation of ROCK PRODUCTS DAILIES will not depend on any one single proposition—we will cover everything. 10,000 copies will be printed and given efficient distribution every day. Quality in this circulation will come by reason of the fact that every visitor at the show; every delegate attending the National Builders Supply Association Convention; the National Conference on Concrete Road Building; Tenth Annual Convention of American Concrete Institute; Annual Convention of National Association of Sand and Gravel Producers—these meetings will be held during the progress of the Show—will read ROCK PRODUCTS DAILIES. They represent millions. There's our quality. It's up to you to take advantage of it.

You can intimate your desire to forward the movement of progress, which means the enlargement of the industry, by co-operating with other members of your craft, by using space in the columns of this paper and making announcements to the reading members of your craft everywhere. This includes all the readers of the regular monthly issue as well as the daily issue of ROCK PRODUCTS. We shall be pleased to discuss this matter with you personally.

AMERICAN



Over 40 Years' Experience Built Into This Machine

The experience of over two-fifths of a century in designing and building drilling machines for all kinds of deep drilling has enabled us to incorporate the most practical knowledge of the requirements in the design of

The "New American" Blast Hole Cable Drilling Machine

First of all the machine is built low to give it greatest stability, and the derrick is placed at one side of the center to balance the band wheel on the other.

The derrick is one of the strongest ever constructed and is designed to be raised by the power of the machine.

The important feature of the design of this machine is that it carries drilling tools weighing up to 1200 pounds, and the machine is so simple in design that it is not of excessive weight and therefore readily portable.

It delivers 55 to 60 strokes per minute and will maintain a speed of 60 strokes per minute in a dry hole to a depth of 40 feet.

It will drill 50 to 100 feet of 5¾ inch hole in a 10-hour day in average working conditions. Not a *record* day, mind you, but *average conditions.*

The drilling tools are always *hung up* off the bottom when spud beam is stopped and always start on the *down stroke.*

There are no gear wheels or clutches and the spudding motion is stopped instantly regardless of the speed of the engine.

Fitted with gasoline, steam, or electric power.

Bulletin 129 tells about this improved machine. Shall we mail you a copy?

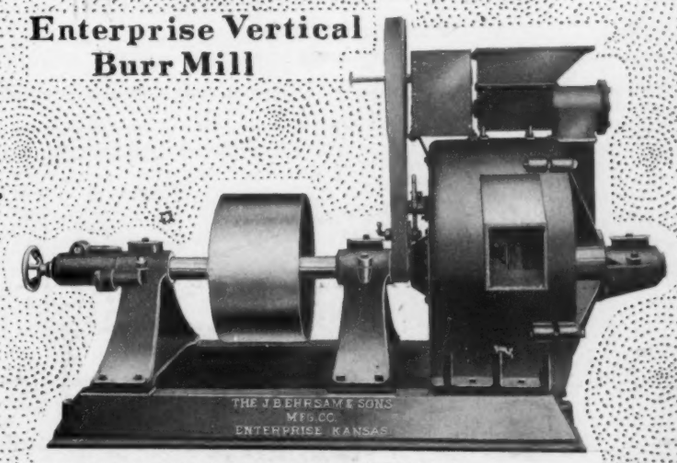
The American Well Works

General Office and Works:
Aurora, Ill.

Chicago Office:
First National Bank Building

Equip your grinding plant with EHRSAM grinding & separating machinery

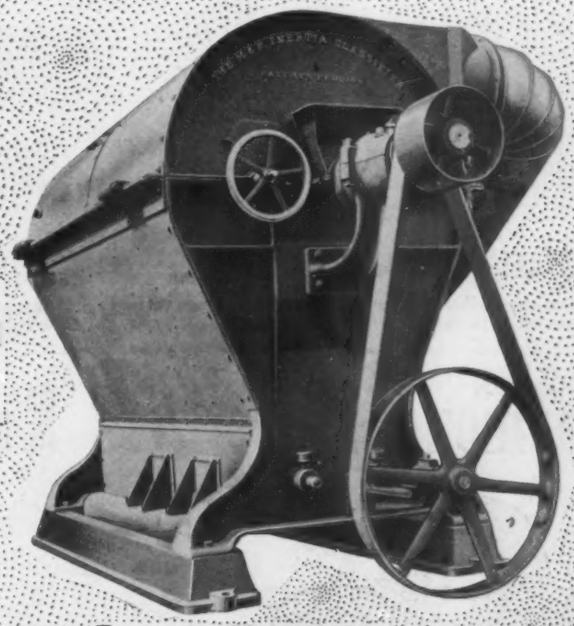
Enterprise Vertical Burr Mill



THE MORSHER-EHRSAM SYSTEM of GRINDING & SEPARATING will enable you to produce a finer product without corresponding increase in power.

SEND US A SAMPLE of your material stating fineness and capacity required and we will furnish full particulars.

Horizontal Burr Mill



Inertia Classifier

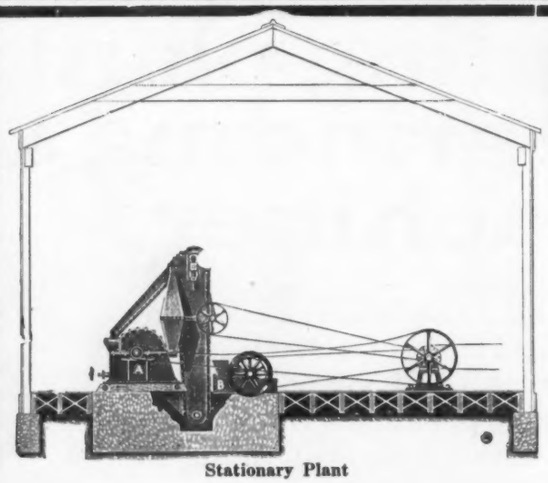
THE INERTIA CLASSIFIER is of inestimable value in plants where a fine material is required owing to its low cost per ton capacity and owing to the small amount of power required per ton capacity.

It can be operated in connection with Burr Mills Hammer Mills or any other type of grinding Mill.

J.B.EHRSAM & SONS MFG.CO.

Manufactures of GYPSUM PLASTER MILL MACHINERY.

ENTERPRISE, KANSAS.



Stationary Plant

Reclaim Your Waste Product

GRIND YOUR LIMESTONE SCREENINGS AND MAKE LIMESTONE FERTILIZER

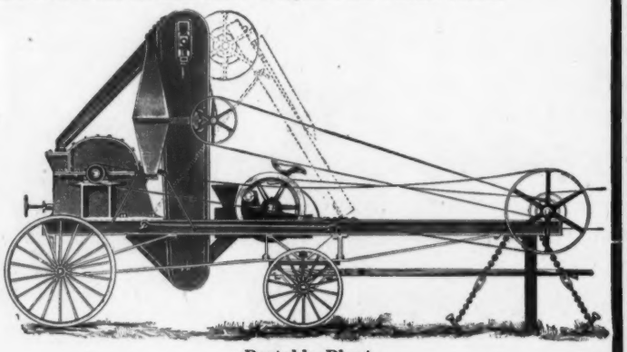
What is Now a Dead Loss to Some Quarrymen Can Be Turned Into Good Profits

WE FURNISH COMPLETE PLANTS OF ANY CAPACITY DESIRED

Manufactured and Licensed under 87 Separate and Distinct Patents

We now have over 50 plants in operation

BULLETIN NO. 4 EXPLAINS THE PROPOSITION

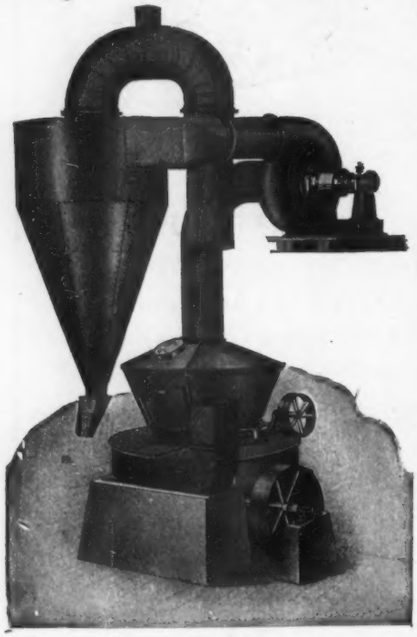


Portable Plant

The Williams Pat. Crusher & Pulv. Co.

ST. LOUIS 2705 N. Broadway
CHICAGO: Old Colony Bldg.
SAN FRANCISCO: 268 Market Street

Raymond Pulverizers Reduce Cost of Cement Making



Through their efficiency and economy in the grinding of coal and limestone in cement plants the Raymond Mills have become the standard equipment.

No grinding system known will grind coal to so fine a mesh. None will grind so uniformly fine. None costs so little per pulverized ton. None uses so little power. None minimizes the waste. No tailings to be reground. No other method is dustless. No grinding room is so clean.

RAYMOND PULVERIZING AIR-SEPARATING SYSTEM

Manufacturers who have grinding problems in other industries will find that the Raymond Mill, while most efficient in producing a ground product of any required mesh, will at the same time work economies of so many varied kinds that they will prefer it to all others. **All installations guaranteed to do what we claim.**

Write for our "Book on Pulverizing"—It embodies the most advanced ideas in Grinding Engineering—being the result of 25 years study; involving an expenditure of hundreds of thousands of dollars in experiments, inventions and improvements in pulverizing processes in all industries.

After analyzing conditions in your plant we will guarantee it to do a definite service or remove the installation at our expense.

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

SEND FOR THE BOOK

**Raymond Bros. Impact Pulverizer Co.,
1301 N. Branch St., Chicago.**

Please send us your Book on Modern Methods of Pulverization.

Name .....

Street.....

City.....State.....

AUSTIN GYRATORY CRUSHERS

Made in Eight Sizes

50 to 5000 Tons Per Day

Plans and Specifications submitted and expert advice free on any problems involving rock-crushing or earth-handling.

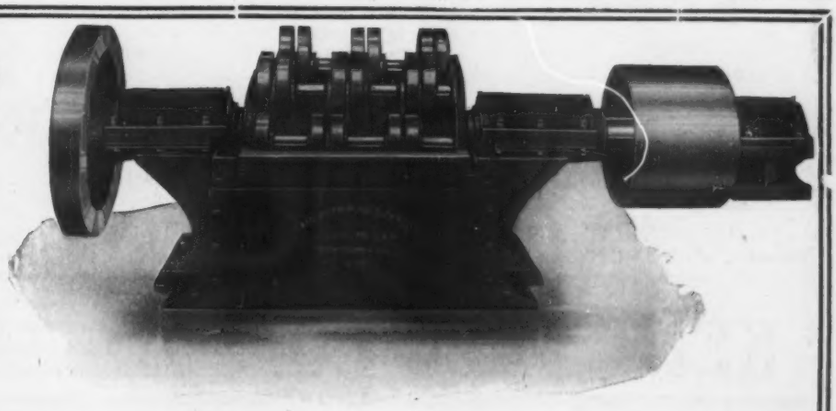
AUSTIN MANUFACTURING CO.

CHICAGO

New York Office: 50 CHURCH STREET Canadian Agents: MUSSENS, Ltd., Montreal

We manufacture:—Road and Elevating Graders, Scarifiers, Road Rollers, Quarry Cars, Dump Wagons, Stone Spreaders, Street Cleaning Machinery.

SATISFIED



BECAUSE, more tons of

Pulverized Limestone

has been produced and can be produced with a larger

Percentage of Fines

with

LESS POWER and UP KEEP COST

than with any other machine we have used or have seen in use.

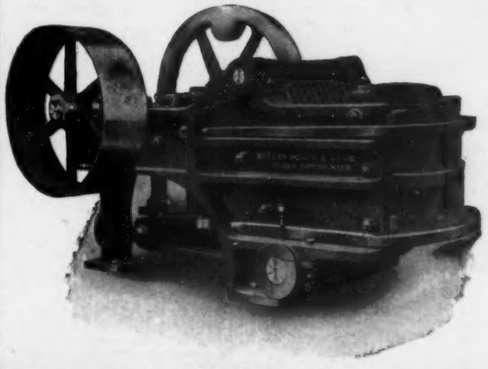
"We bought No. 15 American Ring Pulverizer March 1910 and were pleased. We bought No. 24 American Ring Pulverizer January 1912, have operated it twenty-four hours daily.
Our orders exceeded our output, a condition that called for additional machinery.
EXPERIENCE and INVESTIGATIONS caused us to install No. 48 American Ring Pulverizer.
The American Ring Pulverizer has been found to be superior after three years' trial."
Thus writes, The G. C. Buquo Lime Company.

This machine will crush and pulverize gravel, quartz, sandstone, or any kind of rock.

A GUARANTEED MACHINE
(Made in six sizes)

WRITE FOR PARTICULARS

American Pulverizer Company, E. St. Louis, Ill.



Nippers—17 x 19", 18 x 26", 20 x 30", 24 x 36" and 26 x 42".

Jaw and Rotary CRUSHERS

For all Rocks and Ores Softer than Granite

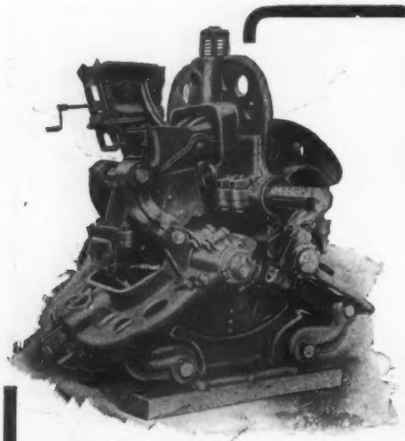
GYPSUM MACHINERY—We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

Special Crusher-Grinders for Lime

Butterworth & Lowe

17 Huron Street, Grand Rapids, Mich.

Crackers—6 sizes—many variations.



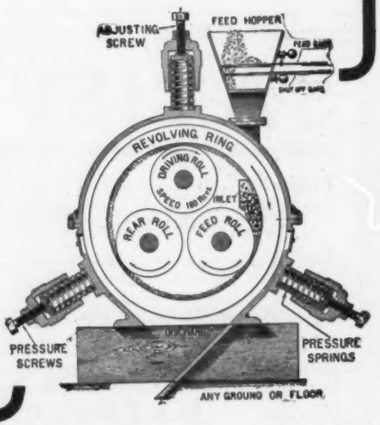
MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY, Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

WE DO NOT CLAIM ALL of the CREDIT for this achievement

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.



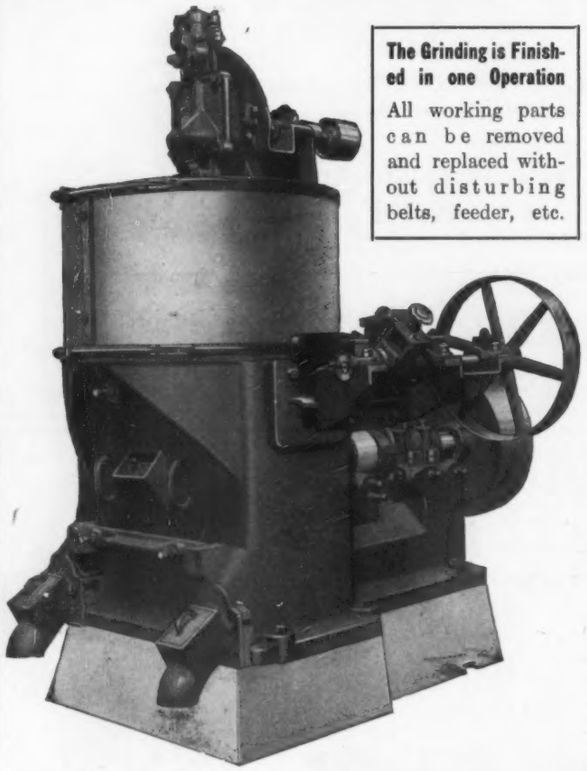
THE RING WOBBLES

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

KENT MILL CO.

10 RAPELYEA ST., BOROUGH OF BROOKLYN, N. Y. CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

BONNOT PULVERIZER

Grinds and Screens Limestone, Raw Lime and Hydrated Lime

Does it at One Operation. Gives You Any Desired Fineness

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

THE BONNOT COMPANY

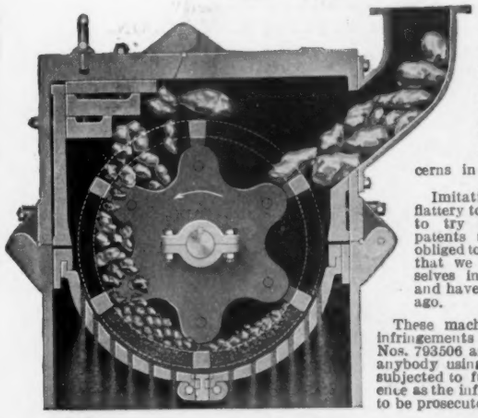
909 N. Y. Life Bldg.
KANSAS CITY, MO.

CANTON, OHIO

THE GARDNER CRUSHER

For Grinding and Pulverizing Limestone, Feldspar, Oil Cakes, Bone Tankage, Marl, Phosphate Rock, Bricks, Granite, Coal, Etc.

WARNING



We warn our prospective customers against imitations of our machine which have lately been put on the market by two of the largest concerns in America.

Imitation is a great flattery to us but in order to try to infringe our patents they have been obliged to resort to devices that we have tried ourselves in the beginning and have abandoned long ago.

These machines are direct infringements of our patents Nos. 793506 and 1013527 and anybody using them may be subjected to future inconvenience as the infringers are going to be prosecuted.

GARDNER CRUSHER COMPANY Office: **1482 Broadway**

Demonstrating Plant: 556 West 34th Street, New York

AGENTS

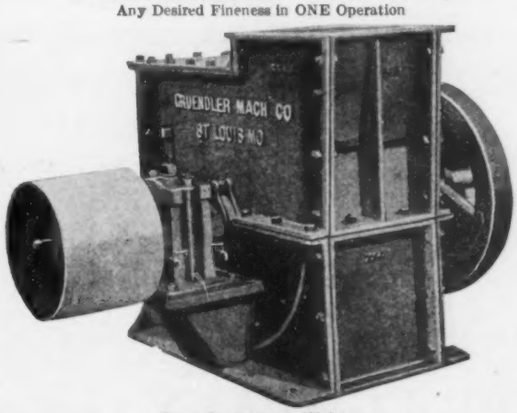
MARSH COMPANY, Old Colony Bldg., Chicago, Ill. C. O. BARTLETT & SNOW CO., Cleveland, Ohio

W. E. AUSTIN MACHINERY COMPANY, 2 Spring Street, Atlanta, Ga.

GRUENDLER PULVERIZERS

Grind perfectly Limestone, Phosphate Rock, Coal, Brickbats, Coke, Kaolin, Shale, Marl, Fireclay, Bones, Tankage, Fertilizer Materials and Ores of all kinds.

Any Desired Fineness in ONE Operation



One Customer Writes:

"The Crusher works to our entire satisfaction and we believe we have selected the best make for our purpose."

Another One Says:

"The two Crushers you have furnished us have given entire satisfaction. We are now considering putting in another machine of larger capacity; kindly state lowest prices and sizes."

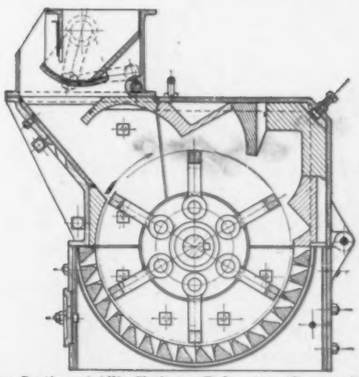
We manufacture these machines in sizes from 3 to 400 tons daily capacity. The entire interior is constructed of steel and they are built for great strength and durability throughout. They are easily handled, all adjustments being made from the outside.

Write for Catalog and Prices

GRUENDLER PATENT CRUSHER & PULVERIZER COMPANY

924-928 N. FIRST STREET SAINT LOUIS MO

Pulverators



Cross Section of Allis-Chalmers Pulverator (Patented)

Pulverizing

by a New Principle

Note that Involute Curve The Direction of Rotation

Advise us your requirements concerning capacity and fineness wanted

Forward Sample of Your Material

Complete Rock Crushing Plants and Cement Mills—Power Plants—Electric Motors

Allis-Chalmers

Manufacturing Company

OFFICES IN ALL PRINCIPLE CITIES

MILWAUKEE, WISCONSIN.

For All Canadian Business Refer to Canadian Allis-Chalmers, Ltd., Toronto, Ont.

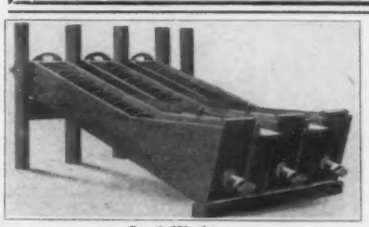
FOREIGN REPRESENTATIVES:—Frank R. Perrot, 883 Hay St., Perth, W. A. Frank R. Perrot, 204 Clarence St., Sidney, N. S. W. Mark R. Lamb, 87 Galeria Beeche, Casilla, 2653, Santiago, Chile. H. I. Keen, 732 Salisbury House, London Wall, E. C. London, England.

TISCO MANGANESE STEEL CASTINGS

FOR SEVERE SERVICE

TAYLOR-WHARTON IRON & STEEL CO.

HIGH BRIDGE, ... NEW JERSEY



Sand Washers

LEWISTOWN FOUNDRY & MACHINE CO. Lewistown, Pa.

Builders of heavy duty crushers and glass sand machinery.

Glass sand plants equipped complete

Write for prices and catalog

It Can't Be Done. No, Sir.

NO OTHER PULVERIZING MILL
CAN COMPARE WITH

The Giant Griffin Mill

As a Cement Material Pulverizer

IT HAS STOOD EVERY TEST that exacting cement mill operators have subjected it to and has come through with flying colors.

ONE OF THE LARGEST COMPANIES now employ 50 Giant Mills; another 31; another 8; several 4. And many of these have taken the place of other types of mills.

NO MILL HAS SUCCEEDED THE GIANT—every mill we have sold is in operation—may we send descriptive catalog and prints?

Bradley Pulverizer Co. BOSTON LONDON BERLIN

KEEP THE WORK GOING

Nothing is more important in contracting work and quarrying than the prompt and certain movement of cars. Delays affect the whole job. To avoid delays locomotives must be reliable and always ready for service.

Our standard locomotives are built to insure reliability and constant service. Only tested materials are used in their construction. All wearing parts are made to templates and gauges. Interchangeability of like parts is guaranteed, and long delays waiting for duplicate parts avoided.

Behind each locomotive is the experience of 78 years constant locomotive building.

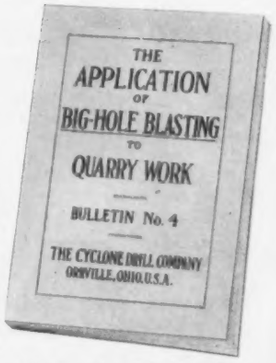
AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET, NEW YORK

McCormick Building, Chicago, Ill.
Dominion Express Bldg., Montreal, Canada
Carl G. Borchert, Pioneer Building, St. Paul, Minn.
A. Baldwin & Co., New Orleans, La.
N. B. Livermore & Company, San Francisco and Los Angeles, California
Northwestern Equipment Company, Seattle, Wash., and Portland, Oregon

IT PAYS DIVIDENDS

THIS BULLETIN



It explains just how the big-hole method of blasting reduces the cost of stone.

The analysis embraces not only drilling and shooting operations, but it deals with the quarry plant as a whole and shows how the big drill increases output and reduces cost in ALL departments.

THE BULLETIN contains 68 pages, with illustrations showing 32 plants where CYCLONE DRILLS are earning from 100 to 500 per cent on the investment.

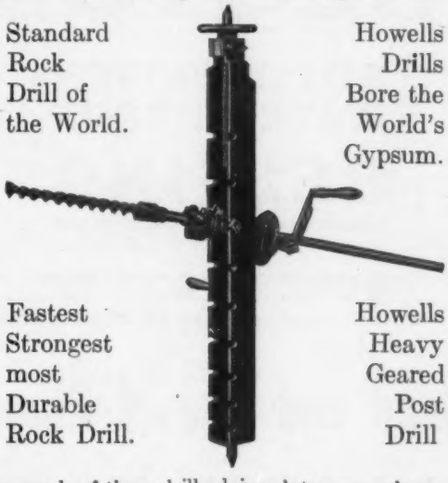
We will be glad to furnish Bulletin No. 4 to all who are interested in high-efficiency plant operation. Send for it.

THE CYCLONE DRILL CO., BOX 630 ORRVILLE, OHIO

HOWELLS DRILLS

for all purposes where drills are required. Combine efficiency and economy.

Standard Rock Drill of the World.



Howells Drills Bore the World's Gypsum.

Fastest Strongest most Durable Rock Drill.

Howells Heavy Geared Post Drill

Thousands of these drills doing duty everywhere — speak for themselves.

These drills have a record — can't be beat. Will drill from five to seven inches per minute in gypsum or soft rock.

We make over 40 different kinds of Auger Drills, operated by Hand, Electricity and Air.

Howells Mining Drill Company

Plymouth, Pa., U. S. A. :: *Write for Catalogue No. 28 today*

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New Chicago & Northwestern Depot, Chicago

THREE hundred and twenty thousand square feet of Triangle Mesh Concrete Reinforcement used. Triangle Mesh Concrete Reinforcement is made from Cold Drawn Steel Wire. Tensile Strength 85,000 pounds per square inch. Furnished in rolls of 150, 200 and 300 feet long.

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has been made for over fifty years. It has always maintained a standard of high quality and uniformity. It is today recognized as the leading high calcium lime.

For chemical or building purposes it will give the best of results.

Two plants with ample capacity and two railroads, guarantee prompt shipments and quick deliveries.

Mitchell Lime Company

Works:
Mitchell, Ind.

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14-inch Leviathan Belt Conveying Hot Clinkers.

Get These Facts

What you want is belting that will give you your money's worth in absolutely dependable service.

It will take about two minutes of your time to write our nearest house for straightforward facts that prove conclusively the unusual service-value of Leviathan and Anaconda Belting.

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New York Chicago Boston
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MAIN BELTING CO. OF CANADA, Ltd.
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MONARCH HYDRATED LIME

The National Lime & Stone Co.
CAREY, OHIO

Waste Means Loss of Money

WASTE means that you are reaching down into your pocket and meeting leaks that should not exist. For more than seven years we have been expounding the merits of

Monarch Hydrated Lime

As a result, thousands of contractors will use no other. They have learned by experience that it more closely approaches perfection than any other lime, because there is absolutely no waste.

They know that it requires no screening

That it takes more sand; gauges with one-third less plaster and spreads farther and easier than lump lime

These are features that are causing thousands to use *Monarch Hydrated Lime.* Are you one of this number?

"NESTOR"

SOLID WOVEN WATER PROOF

BELTING

BUILT ESPECIALLY FOR

Sand and Gravel Plants

Write for Catalog Just Off the Press
Kindly Mention This Paper

THE AMERICAN FABRIC BELTING CO.
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The Ohio and Western Lime Company

WORKS AT
Huntington, Indiana
Marion, O.
Gibsonburg, Ohio
Fostoria, Ohio
Sugar Ridge, Ohio
Tiffin, Ohio
Genoa, O.
Limestone, Ohio
Lime City, Ohio
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MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio and Indiana White Finishing Lime, Ground Lime, Lump Lime, Fertilizer Lime, Hydrate Lime, Cement, Plaster, Hair, Etc., Etc.

MAIN OFFICE: Huntington, Ind. Branch Office: Marion, Ohio.

Capacity 8000 Barrels Per Day

BANNER HYDRATE LIME

That Made Gibsonburg, Ohio, FAMOUS

MANUFACTURED BY THE

NATIONAL MORTAR & SUPPLY CO.

PITTSBURG ∴ ∴ PENNSYLVANIA

CROWN HYDRATE

HIGH CALCIUM HYDRATED LIME

At present prices you can waterproof, improve the color and strengthen the texture of all cement construction and actually **save money** because the Hydrate **replaces** the same amount of cement (15 to 25%).

Kritzer Vacuum Process

MARBLEHEAD LIME COMPANY

KANSAS CITY CHICAGO

"If It Is Lime We Make It"

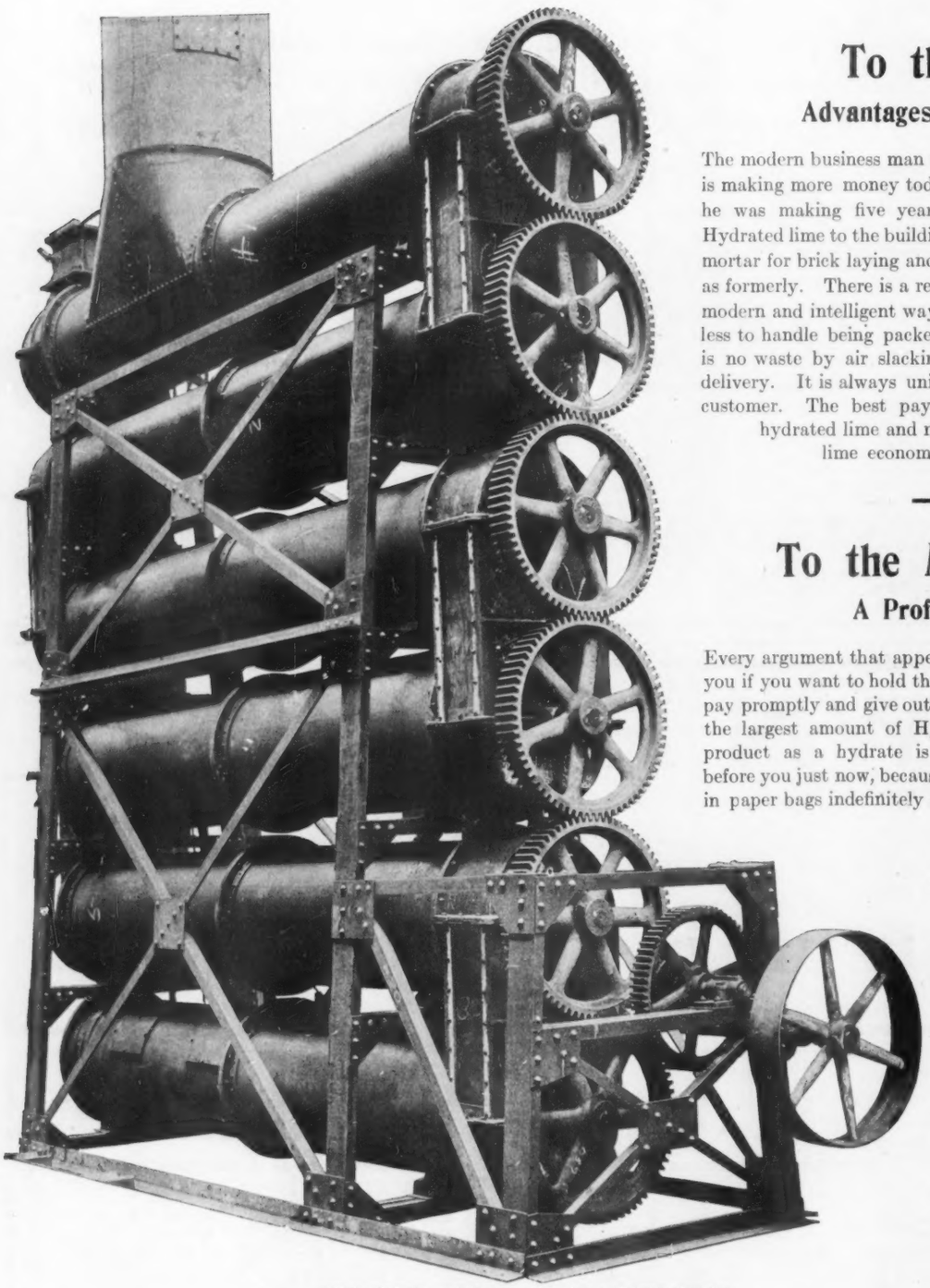
Dealers, Attention!

We manufacture the **Strongest Lime** in **Ohio.** The reason! Our Lime Stone is of that quality. We can ship straight or mixed cars of bulk, barrels, Mason Hydrate, Lime Flour White Finishing Hydrate, also Clover Grower for improving the soil. Write or wire for prices.

Scioto Lime and Stone Company

Delaware - - - - - - - - - Ohio

HYDRATED LIME



KRITZER CONTINUOUS HYDRATER

To the Dealer

Advantages in Handling, Etc.

The modern business man who is a dealer in builders' supplies is making more money today out of his lime customers than he was making five years ago, because he is now selling Hydrated lime to the building trades for the purposes of making mortar for brick laying and for plastering instead of lump lime as formerly. There is a reason for this: Hydrated lime is the modern and intelligent way of handling that material. It costs less to handle being packed in neat, strong paper bags; there is no waste by air slacking or by dumping at the point of delivery. It is always uniform and gives satisfaction to the customer. The best paying customers are now demanding hydrated lime and no other. It is the way to sell lime economically and profitably.

To the Manufacturer

A Profitable Method

Every argument that appeals to the dealer is doubly forced on you if you want to hold the dealers' business. The dealers who pay promptly and give out large orders are they who are selling the largest amount of Hydrated lime. To sell your entire product as a hydrate is the biggest business opportunity before you just now, because you can store your hydrate packed in paper bags indefinitely so that your kilns can run continuously and you can select your customers more carefully because you don't have to ship your goods the very day that your lime is drawn. To hydrate your entire product makes a dignified business establishment out of your old fashioned lime plant, and the difference by doing business the modern way is gratifyingly profitable.

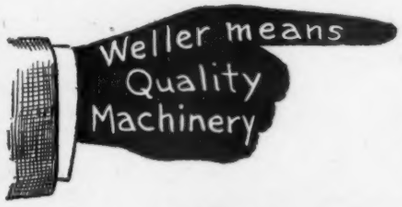
THE KRITZER COMPANY

CHICAGO **ILLINOIS**

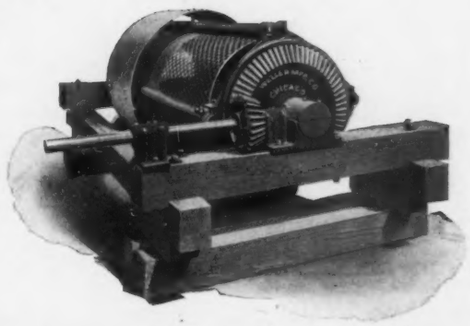
WELLER-MADE

WELLER MACHINERY

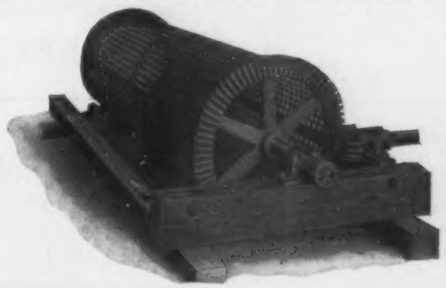
stands for absolute satisfaction in quality, construction and efficiency



ALL your Elevating, Conveying and Power Transmission problems can be solved by employing the Weller Machinery. It is built to SERVE and to SATISFY. ¶ Weller machinery is recognized as the correct method for handling rock and other heavy materials. It saves labor and minimizes your running expense. The Weller Power Transmission machinery is known and approved for its quality and utility.



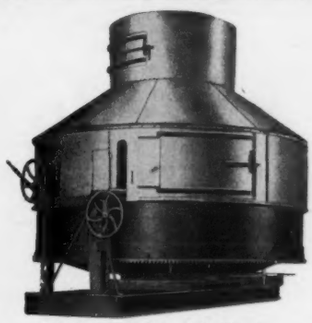
WRITE for our catalogue No. 20, containing all the Weller products—free on request.



Weller Mfg. Co. Chicago

New York Office: 50 CHURCH ST.

Don't Buy Hydrated Lime



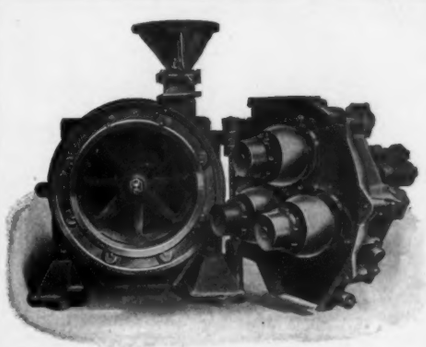
Clyde Hydrator with Hood
"The common sense way"

at random; ***specify "Clyde Process" Hydrated Lime.*** The material that has the qualities ***you*** want, either as a consumer or a dealer. The presence of this ***quality*** has enabled Clyde operators to sell 90% of the Hydrated Lime used in America. Insist on getting "Clyde Process" Hydrated Lime, it will put snap into the appearance of your work, it will ginger up a sick selling organization. If your dealer or producer doesn't carry this material, send us his name, we will tell you where you can get it in your neighborhood. We furnish complete "Clyde Process" Hydrating plants with capacities from 1 ton an hour up. Interesting booklets for the asking.

"The Man that put QUALITY into Hydrated Lime."

H. MISCAMPBELL, Duluth, Minn.

Patentee and Sole Manufacturer of Clyde Hydrators



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CRUSHERS **GRINDERS** **SCREENS**

Thirty Years of Practical Experience has taught us that no one machine is adapted to all purposes. Customers expect correctly designed machines for their special work. Our large line enables one to select properly. It consists of:

CRUSHERS—For coarse, medium and fine work on hard or soft rock. Jaw, Rotary and Hammer design.
CRUSHING ROLLS—Coarse, medium and fine. Hard or soft rock,—wet or dry.
TRI-ROLL MILLS—For medium crushing, giving Two Roll Reductions.
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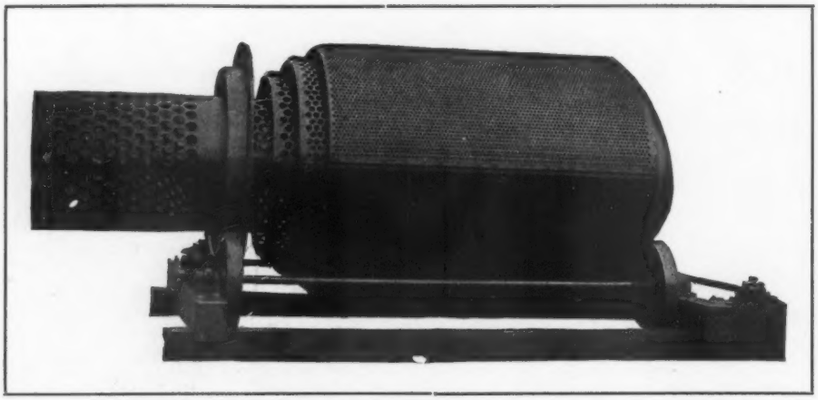
SCREENS—Inclined Vibrating and Rotary for fine or coarse work—wet or dry.

Sampling Crushers, Rolls, Grinders and Screens. Send for Catalogue.

STURTEVANT MILL CO., BOSTON, MASS.

NEW YORK CHICAGO CLEVELAND DENVER PITTSBURGH ATLANTA VICTORIA, B. C. LONDON ENG.

JOHN O'LAUGHLIN'S SCREEN



made solely by **Johnston & Chapman,** is the

ONLY SCREEN

on the market for wide-awake quarry-men, and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the **O'Laughlin** installed

NOW

will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars address:

The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

JOHNSTON & CHAPMAN CO.

Corner Francisco and Carroll Ave., Chicago, Ill.

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

OUR MOTTO—"QUALITY and SERVICE"

(Prices Always Right)

WIRE, MAIL OR PHONE ORDERS TO NEAREST MILL

The National Retarder Co.

SUCCESSORS TO

The Chemical Stucco Retarder Co. Webster City, Iowa

The Ohio Retarder Co. Port Clinton, Ohio

The Binns Stucco Retarder Co. Uhrichsville, Ohio

MILLS AT

Webster City, Iowa **Port Clinton, Ohio**

Branch Office, Toledo, Ohio

To give a pleasing tone to the monotonous gray of cement or stucco use

Bay State Brick and Cement Coating

IT WAS USED HERE

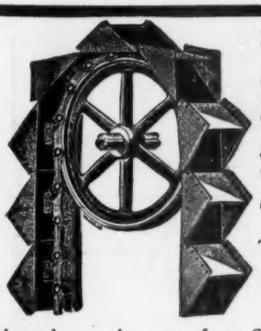
WAITT & BOND, Boston, Mass.
Densmore & LeClear, Engineers

It prevents damage from moisture, protects metal lath from disintegration when used as a frame for stucco and does not destroy the distinctive effect of concrete or cement. Comes in many tints, and can be used as a delightful interior decoration. Ask your dealer for it. If he cannot supply you, write us. Drop a postal for Booklet J, that tells you all about Bay State Brick and Cement Coating.

WADSWORTH, HOWLAND & CO., Inc.

Paint and Varnish Makers and Lead Corroders

82-84 Washington St., Boston, Mass. New York Office, 101 Park Ave., at 40th St



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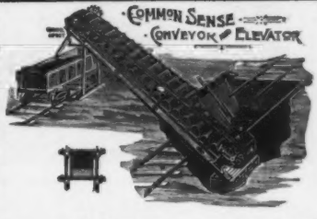
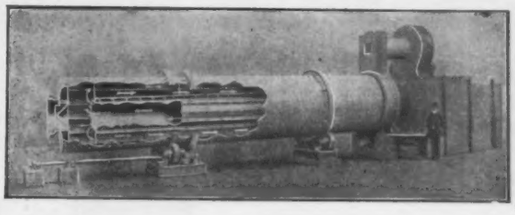


THE GENERAL CRUSHED STONE CO.,
So. Bethlehem, Pennsylvania,

have been using one of our Common Sense Elevators for six years—capacity 400 tons an hour.

THE C. O. BARTLETT & SNOW CO. CLEVELAND OHIO



Section showing direction gases pass through the dryer.

Neither Guesswork Nor Theory

are praticed by us when it comes to solving a problem in drying. We know what we can do for we have been specialists in the drying field for the last 16 years.

RUGGLES-COLES "DOUBLE SHELL" DRYERS

are used in all parts of the world, there being more than 350 installations. Over half a hundred are used for drying sand and gypsum at plaster, brick and cement plants.

We build six regular types of dryers, but for special work we build machines to order.

Book "What We Dry" will interest you.

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Manganese Steel Castings

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CLINTON METALLIC PAINT CO.
CLINTON, N. Y.
LARGEST AND OLDEST MANUFACTURERS OF

BRICK AND MORTAR COLORING

Be sure you get the genuine with the "Little Yellow Side Label" on each package

Let us tell you about Side-Walk Black.

FOUR-TRACK REINFORCED CONCRETE BRIDGE, BEREA, OHIO.
NEW YORK CENTRAL LINES

MEDUSA GRAY PORTLAND CEMENT

CELEBRATED FOR ITS UNIFORM COLOR AND STRENGTH
GUARANTEED TO PASS AND SURPASS STANDARD SPECIFICATIONS

Over 100,000 barrels of Medusa Portland Cement used by the United States Government in the construction of breakwater at Cleveland, Ohio

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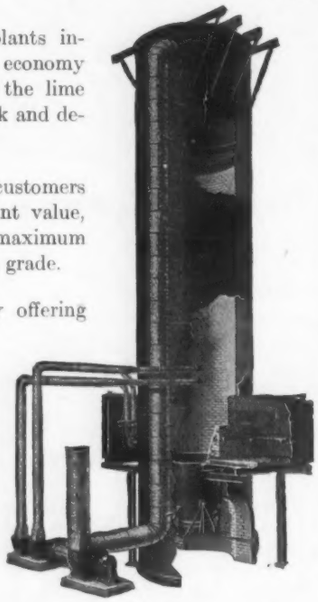
Economy in Lime Burning

Complete lime burning plants installed, securing the highest economy not only in the burning of the lime but also in quarrying the rock and delivering it to the kiln.

This service assures our customers of obtaining highest equipment value, lowest production costs and maximum output of lime of the highest grade.

We are the only company offering this service with the security it affords the buyer.

Doherty-Eldred Lime Kilns are the key to quality and economy in the actual lime burning.



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Combustion Engineers

EXECUTIVE AND SALES OFFICES
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Complete Coal Gas Plants
Complete Lime Burning Plants
Gas Producers
Muffle Furnaces
Special Industrial Furnaces
Refractory Materials

DIRECT HEAT

DRYERS

—FOR—

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

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BACON ⟍ FARREL
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CRUSHING ⟍ WORLD KNOWN
ROLLS-CRUSHERS
EARLE C. BACON, ENGINEER
HAVEMEYER BUILDING, NEW YORK

WORRELL'S ROTARY DRIERS

(First Efficient Rotary Fire Driers Built)
DIRECT OR INDIRECT HEAT,
FOR SAND, CLAY, CRUSHED ROCK, GRAIN
and other granular or fiberous matter. High Efficiency, Durability and Simplicity.

IMPORTANT: In sending for prices and printed matter state your required hourly capacity, approximate % moisture in your product, etc., or mail pound sample in tin or glass.

S. E. WORRELL
Established 1879 — 209 Center St. — HANNIBAL, MO.

Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.
MANUFACTURERS OF THE
Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

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ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.
DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume XIII. **CHICAGO, OCTOBER 22, 1913.** **Number 4**

THE FRANCIS PUBLISHING COMPANY
EDGAR H. DEFEBAUGH, Prest.
Seventh Floor, Ellsworth Bldg., 537 South Dearborn St., Chicago, Ill., U. S. A.
Telephone Harrison 8086, 8087 and 8088.

EDITORS:
EDGAR H. DEFEBAUGH, FRED K. IRVINE.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.
Every reader is invited to make the office of Rock Products his headquarters while in Chicago.
Editorial and advertising copy should reach this office at least five days preceding publication date.

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Published on the 22nd of each month.
Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.
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Don't forget that even your competitor is also your brother.

If there is a dealer who is not getting a little piece of prosperity there is something wrong with his system, for the Lord knows we have been handling some tonnage all the season through.

The coloring of cement mortars for exterior decoration purposes where tinted surfaces and shadow lines can be developed effectively, opens an art feature in the use of cement that is beginning to be developed. Some day you will all have to go down after your pocketbooks right, for when the new art comes into full bloom ROCK PRODUCTS will have to run supplements in colors.

Steady markets for a whole year in Portland cement have made everybody engaged in that important industry feel like the effort is worth while. With just about a perfect product for more uses than any of us yet know it has been successfully commercialized along intelligent lines that has planted the seed of ever growing confidence with the user as well as the handler of the material.

The production of hydrated lime increased by a larger percentage last year than any other rock product, yet the mills are all pushed with orders to capacity. The handling of lime in a neat air-tight paper package is the dealer's way to handle the erstwhile contrary material profitably. To the dealers in the smaller towns it has proven a boon. We no more see those "busted" barrels where the profits used to be deposited on the damp floor. The new man at the mortar box, who displaced the puttering "angel" of yore, won't have any other kind but "ready slaked stuff."

Improvements like inventions that benefit all mankind make the sweetness of the fruit of civilization. To penalize the putting up of plaster board with the fair average cost of putting up wooden lath is an outrage against civilization, because it prevents most of the people who live in the big cities from getting the benefits of the immense improvement and economy introduced and offered in all the markets by clean, sanitary and fire-resisting plaster board. And it is just as cheap to the user as wooden lath, that worst specimen and relic of the dark ages in building materials. Incidentally, plaster board is an item on which the enterprising dealer can afford to work up his business. It helps itself.

Storage and reclaiming of the products of the rock crusher upon some more economical basis than that of using enlarged bin capacity is being steadily developed by the biggest factors in the quarry business. The discrimination of sizes in the specifications is inevitable with the expansion of the industry, but there is a saving clause in the fact that the specifications are always leading to smaller sizes, so that a recrush from storage rock is the maximum expense to be considered. Probably there will never come again a specification that will call for crusher run without screening. Unlimited storage without the cost and maintenance of bins is essential now for the operation of all big quarries. The reclaiming from storage and the motive power most adaptable are interesting topics with the progressive quarryman.

Cleveland, Ohio, most ambitious of American municipalities, with wonderful accomplishment on record, is advancing rapidly with her city-beautiful plan, to become the most magnificent city of the continent. Her new public buildings made of granite, marble, concrete and steel; her street and road system, comprising 1,400 miles of brick covered pavements, her park system and public monuments; her palatial residences, all conceived in good taste and expressed with the highest art attainments, surpass the world. They stamp Cleveland as the type and sample for all others to copy after. Part of, involved in, and by no means a small factor in all of this progress, the dealers and supply men are the most intelligent, efficient and dependable, and these qualities put into practice have made them phenomenally successful. Dealing in building materials is not a game in Cleveland; it is strictly business on a better basis than elsewhere.

The great road congress at Detroit was a wonderful success. Every section of this great country of ours was represented and there was quite some education on the road problems. It looks as if we are really getting ready to make a start at actual practical road improvements. Like almost every other matter of great public concern and interest, there is an inseparable political phase to it, and that is where it is sure to "get gummed up." The element of personal selfishness of politicians, the principal feature of American politics, is as damnable as it is asinine. It prevents the realization of every progressive purpose of the people. There is no way to actually get the road improvements without getting by the politicians, and it's awful that not more than a teaspoonful of brains is available on election day. The men who would do things for the greatest good of all citizens are not attracted by modern politics. Selah!

Fire protection is best obtained by preventing the construction of combustible structures. The tremendous proportion of buildings still using wood entirely or for the entire interior is beyond comprehension, when one considers that they could all be made fireproof without any noticeable addition to the cost. A so-called brick house, built entirely of wood except the outside walls, is very little safer than one covered with wooden siding. So far as the brick go in such a building it is safe—perfectly safe; but the beams, floors, partitions and roof must also be made of incombustible materials before there is anything like an adequate protection against fire. It can be done by concrete structural members with embedded steel, and in no other way. And it can be done and is being done every day by those who know how and really want to avoid fire losses. The old mistakes of the past have cost too much to be removed and replaced summarily, but there is no excuse for assembling new piles of artistic fuel.

EDITORIAL CHAT

COMING ASSOCIATION MEETINGS.

American Concrete Institute, Auditorium Hotel, Chicago, Ill., February 16-20, 1914.
American Road Builders' Association, First Regiment armory, Philadelphia, Pa., December 9, 10, 11 and 12; tenth annual meeting.
American Face Brick Association, French Lick, Ind., December 10 and 11.
Eighth Mid-West Cement Show, Auditorium, Omaha, Neb., January 30 to February 4, 1914.
Illinois Lumber and Builders' Supply Dealers' Association, Chicago, Ill. Date announced later.
Interstate Cement Tile Manufacturers' Association, Chicago, Ill., February 17-19, 1914.
National Builders' Supply Association, Hotel La Salle, Chicago, February 17-18, 1914.
Nebraska Cement Users' Association, Omaha, Neb., January 30 to February 4, 1914; ninth annual convention.
National Association of Sand and Gravel Producers, Chicago, Ill. Date announced later.
National Conference on Concrete Road Building, Chicago, Ill., February 12, 13 and 14, 1914.
Seventh Chicago Cement Show, Coliseum, Chicago, Ill., February 12-21, 1914.

MITCHELL MADE V. P.

Frank Adams Mitchell, familiar to our readers as the inspired poet of the building material industry, and one of the cleverest of Chicago's young and enterprising business men, assumed the role of vice president of the Ceresit Waterproofing Co., Chicago, on the 15th inst.

Mr. Mitchell has attained his responsible position by reason of a decade of ceaseless and untiring efforts in the interests of the various concerns with which he has been connected, reaching a degree of merit which is bound to receive recognition because of his high-powered efficiency, his resourcefulness and his great capacity for hard work.

Mr. Mitchell's rise in the commercial world is from the bottom rung of the business ladder. Coming to Chicago slightly over nine years ago, his first position was as a bookkeeper at a nominal salary. After six months at this he went with the Reeves Pulley Company in a similar capacity. Four and one-half years ago he became connected with the Chicago Belting Company and after two years was made advertising manager of that concern.

He is the son of the Reverend Thomas Mitchell, who preached in Pennsylvania for over fifty years and who died a year ago at the mature age of ninety-five, his demise being on the seventy-third anniversary of his ordination. The Reverend Thomas Mitchell had the unusual distinction in one instance of having married a couple, baptized them and attended their golden wedding celebration; he also delivered their funeral sermons.

Frank Adams Mitchell was educated in Bucknell University and has been an active member of the Chicago Association of Commerce, having been vice president of the Glee Club and a member of the Ways and Means and Trade Extension committees of that influential body. During the past year he was made vice president of the Leather Belting Club of Chicago.

Besides serving as vice president of the Ceresit Waterproofing Company Mr. Mitchell will act as general manager, and under his capable direction we predict a substantially increased use of the meritorious products manufactured and distributed by his concern. ROCK PRODUCTS joins with its readers in wishing Mr. Mitchell an era of success in his new and distinguished position.

Phil Duernheim, general manager of the Glencoe Lime & Cement Co., St. Louis and other ports, spent the month of September in Chicago resuscitating, after suffering from the hot winds off the limestone hills of Missouri. Mr. Duernheim is one of the aggressive business men in the lime and supply trade who has been as it a long time. He never anticipated doing all the business, but always felt that when he sold a carload of lime he wanted to make a profit on it, and it is that character of men in the builders' supply business who are needed more than any others. He reported some branches of his trade in a little quietude. The Southwest has suffered some this year from drought and also not having fully recovered from the over-enthusiasm of building of three or four years previous.

While in New York the other day the editor had the pleasure of a visit with John J. Voekel of J. J. Clark Co., New Orleans, La., and Harry Michel, of the Salmen Brick Co., New Orleans. These gentlemen came to New York to enjoy their vacation and incidentally attend the world series games, and while there made it their business to see the big cement manufacturers. We met them one night with Bert Swett, assistant sales manager of the Lehigh Portland Cement Co., who found business needing his attention in New York also during the series. In conversation with the Southern gentlemen and Mr. Swett, the subject brought out by ROCK PRODUCTS a couple of months ago, "The Necessity of a Reciprocity Club Between Manufacturers and Dealers," was received with enthusiasm, each of the gentlemen believing that the days for piracy either at home or abroad, on river or sea, either in the retail trade or between manufacturer and dealer, or between manufacturers, should be a thing of the past. The possibilities of our industry are unbounded, and where men can work as intelligent competitors, possibilities of greater returns and more satisfactory operations in business are assured.

Al. Moyer, sales manager of the Vulcanite Portland Cement Co., just returned from Detroit, when the writer dropped in his office. "Well, I am glad to see you, boy; had a delightful time in Detroit. The character of men who visited the Good Roads

F. A. MITCHELL, VICE PRESIDENT, CERESIT WATERPROOFING CO., CHICAGO, ILL.

Convention were those who meant something in their community; there were engineers and road builders of stamina, and their education was complete after mingling with the advance guard of American cement roads, and I have that illustrated on my desk this morning by a number of letters from Western highway commissioners and others saying how beneficial their trip to Detroit had been, and stating that they had planned a move at once to put down a mile or two of cement roads."

* * * *

Another manufacturer who had been in Detroit said: "Do you know that that convention over there was a cement roads convention? It seemed to be permeated with enthusiasm because of the acquired knowledge as to the possibilities of the cement roads."

Thomas Magiff, of the Giant Portland Cement Co., just got back from New England and dropped in on the writer. He was the same old Tom. Reported Yankeedom feeling fairly good and buying cement as of yore, especially for improvements of various kinds in cities and general public improvements.

E. U. Leh, formerly superintendent of the Cowell Company and now general manager of the Old Mission Portland Cement Company, San Juan, Cal., has been appointed general manager of the California Central Railroad, in conjunction with his present position.

George H. Fielder, of the Coral Ridge Clay Products Company, Louisville, Ky., was in Atlanta, Ga., recently, visiting the Georgia metropolis on business for a few days.

Henry S. Gray, of J. B. Speed & Company, Louisville, Ky., is taking a well-earned rest on a trip through the west, taking in Salt Lake City, San Francisco, and other larger cities and the Southern California resorts.

W. A. McLean, president of the Wood Mosaic Co., New Albany, Ind., and Louisville, Ky., with Owen Tyler, of Louisville, a well-known building material man, and several others, left October 1 for a moose hunting trip in Canada.

David A. Stevens, a consulting engineer of Chicago, has acquired a controlling interest in the Silica Products Company, owner of a brick and sand plant near Portage, Wis. It is understood that the plant will be enlarged and that new equipment will be installed.

H. A. Collins, manager of the Standard Concrete Products Company, of Louisville, Ky., was recently honored by election to membership in the Rotary Club of the Falls City, representing concrete products. Only one man in each line of business is admitted to membership in the organization.

Charles Kimball, general manager of sales of the Atlas Portland Cement Co., just returned from a sojourn in the West, where he had been aiding the Western departments to convince the dealer and architect that Atlas Portland was the famous Portland of the past as well as of today.

R. H. Whitney, the energetic secretary of the New England Builders' Supply Co., 22 Gordon St., Worcester, Mass., announces that the next meeting of that organization will probably be held in the Bancroft hotel, of that city, sometime in February, 1914. No definite statement can be made yet as to details, it being too early to begin the formulation of the convention plans.

The many friends of E. D. Powell, who was actively associated with ROCK PRODUCTS for five years, will be glad to learn of his recent appointment as Western Representative of "Municipal Engineering." Mr. Powell is a man of high merit and indefatigable energy. ROCK PRODUCTS extends to him its heartiest best wishes for the undoubted success which we are sure will attend his efforts.

Abraham Lincoln with his white hat, otherwise known as S. Dana Lincoln of the National Mortar Co., Washington, is a bit hard of hearing, but has an eye that can see through a boiler eight inches thick. He is not much of a baseball fiend, but he has the habit of attending the world series and was over to New York and Philadelphia, and enjoyed the trip very much. He reported a fair season's business at Washington. S. Dana Lincoln gets his share when there is anything on, and it seems like there is always something going on at Washington.

* * * *

A cement man in speaking of road building in the East said: "There is one good thing coming from these educational meetings: Contractors do not try to build a road on the graft-plan, which has been so prevalent in some parts of the East, especially under Tammany management, for when they can see a road like those built in and out of Detroit, where plenty of cement is used and no cheating in the moisture, it is a permanent advertisement, not only for the contractor, but any one connected with it, and of benefit to the cement industry. No doubt to those who know cement roads when properly built are the finest in the world, but where a contractor plays the slick tricks that characterized their efforts in the early days of Portland cement and all kinds of construction work, it has a kick back of it, and is often worse than being handed one by a real live Missouri mule."

* * * *

Another factor in the contracting business in Washington who has built more streets in the District of Columbia than anybody there is Mr. Joseph Cranford of the Cranford Paving Co. has always been a base-ball fiend; he left a number of streets tied up for a day or two for his various crews to complete before the fifteenth of October, but he sat in a box and watched the Athletics smother the poor woe-begone Giants.

··· FOR THE ··· RETAILER

THE NATIONAL BUILDERS' SUPPLY ASSOCIATION.
(Meets Annually.)

Officers.

President—Edward S. Walton, Youngstown, Ohio.

Treasurer—Henry W. Classen, Baltimore, Md.

Secretary—Frank J. Davis, Youngstown, Ohio.

CONVENTION DATES ANNOUNCED.

The National Builders' Supply Association Will Convene in Chicago February 17 and 18.

One of the most important announcements of the present month, relating to association work and meetings, is that of the annual convention of the National Builders' Supply Association, which will be held in Chicago, Tuesday and Wednesday, February 17-18, 1914, at Hotel LaSalle. In making the announcement of the dates of this annual convention, Acting President Charles Warner, of Wilmington, Del., calls attention to the fact that all arrangements will now be rushed to conclusion and that definite plans of the convention and its prospective accomplishments will be presented to the trade in the way of a general publicity campaign.

Preliminary plans of the association provide for attendance at the Seventh Annual Cement Show by the delegate body on the evening of February 17. It has also been decided to hold the annual subscription banquet of the association on the evening of the 18th.

Anticipation of an increased attendance at this year's convention is based on the strength of a pubicity campaign to be conducted, and its direct relationship to the Seventh Annual Chicago Cement Show which will be in progress on the dates of the convention. Every possible means will be used to increase the attendance over that of last year.

While the official program for the two days' session has not as yet been completed, it is almost certain that papers and discussions on many of the following suggested topics will be heard by those participating in the meetings:

"Good Roads As a Help to Dealers," will be considered from two different viewpoints. The advantage of good roads to the builders' supply dealer and the importance of the use of materials in highway construction which might be supplied by the local dealers.

"Employes Compensation and Employes Liability" will undoubtedly be discussed in a broad sense.

"Lien Laws." On this subject there will be discussions and a review of the latest state laws bearing directly upon the business of the builders' supply dealer.

"Team Efficiency Problems." This subject is of timely interest, inasmuch as a great variety of opinions as to the pros and cons between horse-driven trucks and automobile trucks is in existence.

"Show Rooms for Retail Dealers," a topic which is a puzzling one. Discussion on this subject will undoubtedly bring out many individual successful and unsuccessful methods for the gaining of publicity through actual display of materials.

"Cement Handling in Packages." There are many original ideas on this subject open for discussion. The discussion will probably be in the matter of economy and efficiency in the transporting of the material.

"Specialty Department Work." Discussions on this topic will undoubtedly be of exceptional interest. Successes and failures in this work are not uncommon.

"Prosperity and Confidence—Pass It On." The broadness of this subject should gain immediate recognition of the question of whether or not prosperity depends largely upon the mental attitude of the public.

"Publicity Methods for Dealers." Discussion of this subject will embody every phase of the builders' supply dealers advertising problems.

There are a number of other topics, open for consideration, to be included in the official program of the meetings and it is certain that more of these topics will appear in the program in their proper places. However, the topics named in the foregoing paragraphs should be sufficient to cause a full realization by the association members of the importance of their attendance at the convention.

LOUISVILLE RETAILERS.

Slackness of Building Trades Noticed—Tyler Quarry Consumed by Flames—Prominent Quarryman Meets Sudden Death.

Louisville, Ky., Oct. 18.—The continued slackness of the building trades in and around Louisville has operated to make things rather slow with those handling building materials of various sorts, although there are a few refreshing exceptions to this general rule. Conditions out in the state are much better than might have been expected after the prolonged and exceptionally severe drouth of the past summer, and several handlers of materials in Louisville have found the country trade to be their salvation, while things were dull in the city.

The number of building permits issued by the Louisville building inspector during September was larger than the number issued during the corresponding month of last year, but the amount involved was by no means as great. During the month 243 permits were issued for buildings and repairs valued at $297,710, while last year the number of permits was 204 and the value represented $330,970.

Col. Robert J. Tilford, building inspector of Louisville and one of the most popular men in the city, died recently at his home in the Falls City at the age of 62 years, after an illness of several months. Colonel Tilford had been prominent in politics for a number of years, serving as chairman of the board of public safety of Louisville in 1893, and serving several terms as building inspector beginning in 1896, being reappointed to this position by the present city administration. His ability and courtesy in this office won for him many friends among Louisville contractors, builders and architects, all of whom were sincerely grieved at his death. William J. O'Sullivan, who has been for some time computing engineer in the city building department, was appointed by the mayor to succeed Colonel Tilford. He is well known to Louisville architects and builders, and is regarded as entirely competent to fulfil the duties of his new office.

The big stone crushing plant of the R. B. Tyler Company, which is located twelve miles southeast of the city, was destroyed by fire some days ago, the loss amounting to between $40,000 and $50,000. The fire started in the engine room of the plant and spread to the second and third floors very rapidly, no efficient method of fighting it being available. The plant was built only two years ago. The difficulty of fighting the fire was considerably enhanced by the knowledge that 18,000 pounds of dynamite and six kegs of giant powder were stored near the plant. The loss was fully covered by insurance, however, and R. B. Tyler announced that he would rebuild. The new plant, according to Mr. Tyler's present plans, will measure about 75 by 150 feet, with a height of 85 feet. The building will cost about $6,000, and its equipment $10,000 or more. Construction will probably begin next spring.

The several lines of building supplies and materials handled by the R. B. Tyler Company have been moving very slowly recently, the state of the building situation at Louisville making the call for materials very slight.

Edward Zabel, aged 39, proprietor of a stone quarry in Louisville which furnished stone for crushing purposes around the city, and Will Gardner, one of his employes, a negro, were instantly killed at the quarry a few days ago when a 50-foot boom broke and fell on them. Mr. Zabel leaves a widow and two children, besides other relatives.

SAN FRANCISCO RETAILERS.

Lime and Brick Market Active—Hydrated Lime in Exposition Buildings—Plaster Trade Brisk.

San Francisco, Calif., Oct. 16, 1913.—The San Francisco building record for the last month gives ground for some encouragement, being the best since last April. The total valuation was $2,273,723, compared with $1,613,881 for the previous month, and $1,783,145 for the corresponding month of last year. Aside from this record of private building, contracts are now coming out on the new city hall, and a large amount of material is being delivered for the Exposition buildings. The outlook is fairly good, with inquiries coming out for many large apartment houses, etc., of permanent materials.

Country trade for September has been fair, but hardly up to normal. Apparently what is most needed is a good rain, as practically all sections are suffering from drought, and farmers want some assurance that they will not have another dry year before they will undertake any extensive improvements. In many places, however, crop returns have been better than usual, and collections are consequently improving in such localities. A most encouraging feature is the recent sale of several issues of municipal improvement bonds, giving money to proceed with work which has been held up for some time. Better progress is also being made in financing private development schemes, and the general increase in Pacific Coast bank clearings last month is taken as a sure sign of improved financial conditions.

While conditions are improving, the actual movement of materials through the summer has been slow, and with a comparatively large output there is some pressure to sell in several lines. Brick has dropped $1 per M, and the lime market is quite weak, while in most materials there is a decided feeling of easiness.

W. S. McLean, sales manager of the Holmes Lime Company, says: "Our trade on 'Diamond' brand finishing plaster lime is still active, though the lime market is very unsettled just now, prices being considerably cut. Our brick lime is moving about as usual, and the hydrated lime trade is fairly active for this time of year, owing to the fact that quite a tonnage has gone into concrete for waterproofing, and the fact that the Panama-Pacific Exposition directors have decided on the use of 20 per cent of hydrated lime in the mixture of gypsum plaster and coloring matter for the smooth plaster on the Exposition buildings. The fire brick and fire clay market has been rather quiet for the last few weeks. The plaster market is quite active."

MILWAUKEE RETAILERS.

Milwaukee, Wis., Oct. 18.—Building activity in Milwaukee has been unusually brisk all the season and Building Inspector W. D. Harper seems confident that a new high building record will be established this year. He says that in the list of ninety leading cities of the United States, Milwaukee stood seventeenth in regard to the value of its building construction during the month of September. Although permits were issued last year for two unusually large structures, one costing $2,000,000 and the other $1,600,000, total building investments for the first nine months of the year were only $1,758,635 less than during the same period in 1912. The record up to October 1 shows that 3,219 permits were granted, representing an investment of $10,054,583, as compared with 3,472 permits, for buildings costing $11,813,218, during the corresponding period a year ago.

Many large structures have been planned and work is starting on these this fall. Among them are the following: George J. Meyer Manufacturing Company, Lapham and Clinton streets, reinforced concrete and steel structure, costing $100,000; The Cedarburg Milk Company, North avenue, three-story concrete and brick building, costing $90,000; Phil Ebert Construction Company, three apartment houses, each costing $28,000.

The new Hotel Wisconsin, just opened, Milwaukee's new $1,000,000 hostelry, furnished building supply concerns with a lot of business. More than 1,000,000 bricks, 10,000 barrels of cement, 2,500 tons of steel and 700,000 tile, 12x12, were used in the structure. The Raulf Company, of Milwaukee, had the general contract.

Michael A. Seeboth, aged 29, secretary of the W. H. Pipkorn Company, well-known building material concern of Milwaukee, Wis., died on October 4 at the Trinity hospital in that city following an illness of three months. Mr. Seeboth was born in Milwaukee, March 6, 1884. He was a graduate of St. Mary's school and later attended Marquette college. He had been connected with the W. H. Pipkorn Company for the past eleven years. Mr. Seeboth is survived by his mother, Mrs. Mary Seeboth, and one sister, Miss Marie Seeboth.

The Moores-Coney Company, dealers in building supplies in Cincinnati, Ohio, has purchased the controlling interest in the Marion M. Allen Supply Company of that city, and will operate it as the Newport branch. Marion M. Allen, head of the concern, will continue as manager of the new corporation, which has offices at Tenth and Park avenue. Officials of the Moores-Coney Company stated that the concern would continue to be known as the Marion M. Allen Supply Company, and that business would be carried on at the present location.

The Analogy Between Horse-Racing and Estimating

By G. ALEXANDER WRIGHT.

May it not truly be said that there is very little difference between horse racing and bidding on buildings? Are they not "gambles?" The invitation to figure and the jockey's start are similar; both events arouse a like interest; both hope to win. The odds are long, for there are many entries. There is the usual horse racing talk about the "dark horse," the "favorite," the "pull," the "inside track," and so forth, none of which is probably ever true, in either case; but it is horse racing talk.

At last the start is made, and away they go! The bidders and the ponies over the same ground, the same course, and the owners look on and speculate. The primary object is to get ahead of each other, win at any cost, and each competitor does his best to beat the other fellow. If the first jockey in has forgotten or omitted anything, he is disqualified. If the bidder forgets or omits anything, he "gets the contract." It amounts to about the same thing, and the bidder is quite as much of a real sport, for he takes his "medicine to-day and gambles again to-morrow." But this is not what I started out to say. If, perchance, it has had the effect of seriously arresting the reader's attention to a most important subject, some good purpose may yet be served.

And now to be serious: Speaking of estimating in competition, an experienced and well-respected Western contractor recently described our present estimating methods to me as "a horse racer's gamble."

"Estimate" Does Not Mean "Cost."

Few architects, if they will look squarely at the facts, can honestly differ from the candid Western contractor. Owners, and persons not over kindly disposed toward architects claim that we know but little about the "cost" of a building; but these same people do not themselves know anything of the mysterious and devious processes involved in the obtaining of a bid, which, unfortunately, they too often think is to be the "cost" of the building. Architects, however, know of these things, and that the word "estimate" or "bid" does not really mean the "cost," when the work is finally completed. Architects, however, seldom deem it their duty to enlighten clients upon such matters, and this is especially so in the case of the architect who, by whatever means he may choose to employ, is able to persuade owners into believing that he can give them cheaper and quicker results than some other architect having offices round the corner.

It is not an unusual circumstance for a contractor to sign up for a job, when even the best of us are morally certain that the work, as shown and specified, can never be properly done for the money. But we as architects are paid to see that it is so done, are we not? Why then should we allow an owner, or ourselves, to accept such a bid, and so to place this burden upon any contractor, who, for want of a systematic method, under-estimates his quantities, or, as too often happens, omits something entirely? Some owner (happily not all) are looking for these mistakes, and are ready to seize the advantage, usually in the mistaken idea that they are to get something for nothing. Some architects will be perfectly content with the thought (more is the pity!) that it is none of their business; that it is up to the contractor to look out for himself.

It is well known that under our uncertain system of estimating, by which the contractor is made to take all the chances, these things do and must occur; that they are winked at, and that they cause much unnecessary trouble. But is this good practice, or sharp practice? Surely our ethics should extend beyond the mere personal equation; so, to put it plainly, is it *"honest?"*

Is it just, when we, in a sense, undertake to act as arbiters of the contract? If not, can we wonder at the thousand and one questions, difficulties and extras which occur in the supervision of such a contract, under the present system? Can we wonder that contractors are sometimes suspicious?

Evil of Inviting Bids.

But, not to dwell too long on this picture, let us seek a practical remedy for removing these and the other similar conditions which make such a picture possible. The individual architect or owner, let it be said, is not solely responsible. The entire trouble lies in our senseless, wasteful, unscientific and wholly faulty methods of inviting bids, and in the encouragement to gambling which we, who should be the first to condemn, still extend to bidders. That the contractors do not rise up and smite us is really a source of wonder to me. Not our business, indeed! It is our business to encourage better and more honorable methods.

The scope and character of our construction has advanced so rapidly and consistently of recent years, that scarcely anything is done now as it was even twenty years ago; and the time now allowed to a contractor for estimating is altogether too short; conditions are not conducive to accurate results, Without accurate quantities, there can of course be no accurate bids, and with our rough-and-ready guesswork methods, wide differences in bids must necessarily prevail. The lowest bid is usually by no means the most accurate, and frequently it is out of all proportion to the quantity and character of the work under contract. Before the work proceeds very far, the mistake is discovered; then there arises the natural desire of the contractor to save on his contract.

But the difficulties, and sometimes friction, which we meet with upon our buildings in progress are not usually caused by the effort of the lowest bidder (sometimes spoken of by the daily press as the "fortunate" contractor) to make a larger profit than that to which he is entitled; the difficulties are quite as often due to his not unnatural wish to keep his loss on the contract within the smallest possible limit.

Therefore, is it not indisputable that incorrect quantities are in the first place largely responsible for unnecessarily low, and consequently inaccurate bids, which, in their turn, cause so many of the architect's troubles?

Ample Time and Training Necessary Factors.

Another factor is the too short time allowed to bidders for estimating, while a third and very important factor is found in the fact that our modern methods of construction require special training in order to take off quantities accurately. Few contractors possess these advantages, and even if they did, fewer still could find the time to put the principles of scientific quantity taking into profitable effect.

The ridiculous—even the ludricous—side to our present way lies in the fact that when contractors are invited to submit a bid in dollars and cents in competition, off they go (like the race horses) to compete against each other, neck and neck, as to the quantity of material the job will take; and the more careful a bidder is, in taking off his materials accurately, the less chance he has, under present methods, of getting the job!

The whole business seems absurd to anyone with any pretense to experience in quantity taking. There can only be a certain amount or quantity of material necessary, and no amount of figuring can make it less; it is folly, therefore, to think that a number of bidders on a piece of work will all succeed in taking off just the right quantity; one person might, but not a dozen or more.

New System Needed.

If some system could be adopted whereby each bidder would be furnished with a complete, detailed list of the exact quantities of materials and labor required (thus placing all bidders on the same basis), then the competent, careful contractor would get more contracts at proper prices, and so be able to do better work, while the incompetent and the "shoe-string" bidders would either have to become more competent, or seek other fields of industry; a result which would prove quite as much of an advantage to architects as it would to the remaining contractors.

It is obvious that some such system must in time displace our present wasteful and primitive method, if for no other reason than for the benefit such a system would confer upon both architect and client. It would seem that much good would result, if the chapters of the American Institute of Architects throughout the country gave some consideration to this vital subject, and familiarized their members with the advantages that would follow the adoption of some standardized method or system of estimating upon quantities. This and other kindred subjects have recently been receiving consideration in certain chapters, while many architects and contractors in different states are well known to favor the adoption of an estimating system, based upon accurate bills of quantities, which shall become the true basis of the contract. This will certainly be done some day, and then we shall all wonder why so much time, effort and money has been thrown away in the past.

PITTSBURGH RETAILERS

Pittsburgh, Pa., Oct. 20.—Retailers here are feeling good because of the exceptionally fine weather of the past two weeks. Some of them report quite a spurt in house building in certain sections of the city as a result. There could not be finer building weather than we are having this fall. Contractors are making good use of it to finish up contracts started early in the season. Especially the cement business and heavy construction work is going ahead rapidly. Cement is probably the best seller in the market today. Dealers are having a big trade in lime. Lath and shingles are also strong sellers and outside of the slate roofing radius good business is being done in the latter line.

J. M. Porter has been busy on some nice contracts in western Pennsylvania for paving brick. This summer he has furnished some of the nicest jobs that have been on the boards.

All road contractors and retail dealers throughout western Pennsylvania are greatly interested in the success or failure of the $50,000,000 road bond issue which will be voted on in November. If this goes through it will mean the richest kind of a harvest for the cement people and also for contractors and retail dealers.

Houston Brothers Company is having the best trade in many lines this fall in its history. Lime and cement are very strong on its order books.

D. J. Kennedy Company had a bad fire in its big coal stables on Dimler street last week. This concern is probably the largest retail distributor of coal in the city.

The Pittsburgh Builders' Supply Company, capital $25,000, has been organized here by John J. Trybis, F. Marks and Andy Hamsek, all of this city.

W. S. McDowell, secretary of the Builders' Code Commission, addressed the Pittsburgh Builders' Exchange at its meeting in September on the subject of building laws. He spoke in particular of the work of the commission and legislation which will be presented at the next session of the legislature.

The Storage Transfer & Supply Company, of Niles, Ohio, has bought 2½ acres of ground in that town and will at once erect a big fire-proof storage plant. It will handle coal and also all kinds of builders' supplies.

The September report of building operations in Pittsburgh showed a total of 238 permits to cost $1,434,790. This was quite a gain. At present operations down town are going on in exceptionally large totals and in the outlying sections a little better activity is reported. Some of the big building projects are the 12-story addition to the Pennsylvania Station, for which plans are now being prepared and which will cost not less than $1,000,000; a ten-story building to cost approximately $1,000,000 for the Central District Telephone Company to be erected in Seventh avenue next year and for which plans are being prepared; a $500,000 plant at Economy, Pa., for the Seamless Tube Company of Pittsburgh; $700,000 freight depot on the North Side for the Pennsylvania Lines West, on which work has started; also street car line to connect Pittsburgh and Erie, Pa., is being projected by a company of Pittsburgh promoters and looks very favorable for building in the spring.

EFFECTIVENESS OF PATENT VULCANITE ROOFING.

The up-to-date building supply dealer is easily convinced that effectiveness in any material appearing on the surface of a building is a perpetual advertisement. This is being proved every day where ornamental Patent Vulcanite Roofing is used on new residences. Patent Vulcanite Roofing adds distinctiveness to a residence that is never overlooked—it's the effect which calls attention to its other superior qualities. A prospective buyer of roofing material can be shown a roof of Patent Vulcanite of the "V"-edge effect in any of its various colors and he will at once be led to investigation of its other meritorious qualities. The effectiveness then leads to points of economy, durability, and consistency in the making of a roof of the highest quality. The success of the Patent Vulcanite Roofing Co., of Chicago, Ills., in the supplying of roofing materials for many of the best known residences in the United States is an example of how the effectiveness of their product has led to a broader recognition of roofing requisites which eliminate fire hazards of the old-time wooden shingle.

Articles of incorporation were filed by the Pittsburgh Builders' Supply Company, Pittsburgh, Pa., to manufacture, sell and deal in all kinds of builders' supplies, hardware, etc. Incorporators, John J. Trybis, F. Marks, Any Hamsek, all of Pittsburgh, Pa. Capital stock, $25,000.

RATES IN OLD AND NEW TARIFF BILLS COMPARED.

Article—	Old Rate.	New Rate.	Inc. or Dec.
Firebrick, unglazed	29.97%	10%	—19.97%
Firebrick, glazed	35%	15%	—20%
Bath brick	35%	15%	—20%
Tiles, plain	4c sq. ft.	1½c sq. ft.	—2½c sq. ft.
Tiles, ornamented	8 to 10c sq. ft. 25%	5c sq. ft.	—20.03%
Quarry tiles	45%	20%	—25%
Tile mantels, etc.	60%	30%	—30%
Portland and hydraulic cement	21.32%	Free	—21.32%
White nonstaining Portland cement	20%	10%	—10%
Lime	5c 100 lbs.	5%	—4.17%
Plaster rock	25.42%	10%	—15.42%
Keene's cement	39.73%	10%	—19.73%
Other cement	20%	10%	—10%
Calcined magnesia	7c lb.	3½c lb.	—2½c lb.
Carb. magnesia	3c lb.	1½c lb.	—1½c lb.
Clay, unmanufactured	$1 ton	50c ton	—50c ton
Clay, manufactured	$2 ton	$1 ton	—$1 ton
Limestone rock asphalt	50c ton	10%	—74%
Steel and Iron.			
Hammered iron, copper or steel sheets	40%	15%	—25%
Pickled iron or steel sheets	30.61%	15%	—15.61%
Polished iron or steel sheets	30.50%	15%	—15.50%
Cold rolled iron or steel sheets	25.23%	15%	—10.23%
Cold rolled bands and strips	36.52%	15%	—21.52%
Other cold rolled sheets, plates and steel	20.73%	15%	—5.73%
Cold hammered strips, plates and sheets of iron or steel	36.90%	15%	—21.90%
Coated sheets or plates (tinplate)	26.74%	15%	—11.74%
Steel bars and shapes (Bessemer)	21.98%	8%	—13.98%
Steel ingots, made by crucible, electric or cementation process	21.98%	15%	—20%
Steel shavings	40%	20%	—20%
Rivet, screw, fence and other wire rods	13.91%	10%	—3.91%
Cold rolled bars	19.93%	10%	—9.93%
Round iron or steel wire	38.03%	15%	—23.03%
Cold hammered wire	37.62%	15%	—22.62%
Coated wire, iron or steel	37.98%	15%	—22.98%
Articles made of wire	40.57%	15%	—25.57%
Telegraph and telephone wires	40%	15%	—25%
Wire heralds	74.66%	25%	—49.66%
Wire rope	49.84%	30%	—19.84%
Bolts, iron and steel	20.59%	10%	—10.59%
Nuts and blanks	6%	5%	—1%
Nut washers	6%	5%	—1%
Spiral nut locks and washers	New	30%	
Cast iron pipe	17.62%	10%	—7.62%
Cast iron pipe	¼c lb.	12%	—5.62%
Iron castings	28.31%	10%	—18.31%
Malleable iron castings	13.58¼	10%	—3.58%
Chains of all kinds	46.59%	20%	—26.59%
Sprocket and machine chains	46.59%	25%	—21.59%
Steel rivets, studs and points	44.30%	20%	—24.30%
All steam engines	30%	15%	—15%
Machine tools	30%	15%	—15%
Machinery	45%	20%	—25%
Other iron and steel manufactures	45%	20%	—25%
Percussion caps	30%	15%	—15%
Blasting caps	$2.25 per M	$1 per M	—$1.25 per M
Safety fuses	33.09%	15%	—18.09%
Plaster of paris manufactures	35%	25%	—10%

Free List and Decreases from Old Duties.

Cotton bagging, gunny cloth and similar fabrics	6-10c sq. yd.
Brass, old	
Sand blast machines	15%
Roman, Portland and other hydraulic cement, in barrels	8c 100 lbs.
Same in bulk	7c 100 lbs.
Cement, not otherwise mentioned	20%
Old copper	
Copper, pigs, ingots, bars, plates and composition metal	
Iron ore	15c ton
Iron in pigs	$2.50 ton
Scrap iron and steel	1.00 ton
Wrought iron or steel nails	1½c lb.
Wire nails under 16 gauge	4-10c lb.
Wire nails under 1 inch	¾c lb.
Spikes	¾c lb.

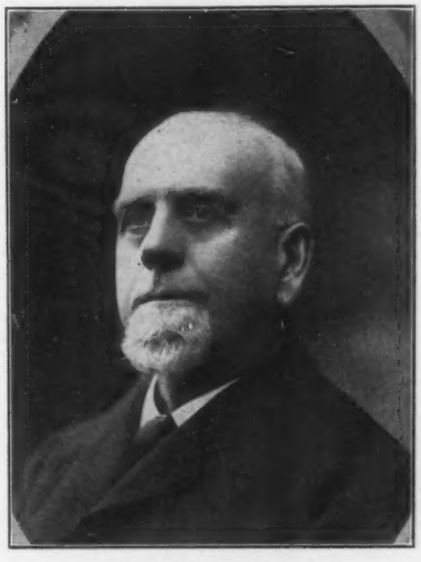
Fred J. Morse, of St. Paul, Minn., has formed The Building Material Company, of that place, which has under construction at the present time a large warehouse and office at 245 Como avenue, near Rice street, and will soon be in position to take care of orders for building material which may be entrusted to the new concern. Mr. Morse has had many years' experience in this field and is a salesman of the first quality.

DEATH OF CHAS. H. LITTLE.

Charles H. Little, titular head of the C. H. Little Company, of Detroit, died at his home in that city on September 5. He had been infirm for a long time and spent last winter at California health resorts. Several years ago Mr. Little began a process of gradual retirement from business activity when Chas. N. Ray became the head of the company. When at home he always showed up around the office in the Penobscot Building and never to the last did he lose interest in the mammoth establishment which his enterprise and perseverance built up.

Mr. Little grew up with the city of Detroit, for when he became connected with the old Sibley concern it was a mere village. For many years Mr. Little was the factotum of the Sibley sand and brick and supply establishment, and his company was the successor of that pioneer concern.

Mr. Little was a very engaging companion and a business man through and through. He was public spirited, recognizing the growth of the city as a part of his own extensive affairs, and he was



THE LATE C. H. LITTLE.

identified with many of the city's best financial and progressive institutions.

He was a strong advocate of association influence among competitors, and was personally identified with early organization of the National Builders' Supply Association as one of its vice presidents and active workers. Previous to the national organization he was active in the several temporary meetings of dealers preceding that event, and was probably the first man to suggest in one of these meetings the formation of the national body.

The wonderful success of Mr. Little's business career was due to the inherent qualities of thrift, enterprise and persistency which were a part of the man. His word was always as good as a bond, and he enjoyed the confidence and admiration of his employes, of the members of his own family and of all who knew him in an extremely wide circle of acquaintances. Few American business men have done so well their full duty in every occasion, and of his equals there are not many.

"TEDDY" WALTON ON THE SICK LIST.

E. S. Walton, president of the National Builders' Supply Association has not been a well man for several months. Under the advice of his physicians he has given up active work temporarily and retired to a health resort to recuperate.

Mr. Walton is a big man. Big in body and big in mind, and he has always been a human steam engine at his work. Before leaving his post of duty he prevailed upon Charles Warner, who is familiar with all the work, to act for him at the head of the National Builders' Supply Association, and Eddie Holway, just about the best and ablest lieutenant that ever happened, is holding down the whole works of the Youngstown Ice Co. Although too busy to eat sometimes, Mr. Holway took the time to send the following letter to ROCK PRODUCTS:

"It is with regret that I advise that Mr. E. S. Walton has been on the sick list for the past six weeks. He has been feeling "bum" for some time so decided to have a thorough examination made, and the doctor advised him that unless he got out of the office his time was very limited. The doctor suggested that he go to the Jackson Health Resort, Dansville, New York. Upon reaching there one of the leading doctors of this institution advised Mr. Walton that if he had delayed coming one week longer the chances would be against him as his health was in a very, very bad condition. The doctor pronounced the case valvular heart trouble. He is in bed all the time and they will not allow him to take exercise of any kind or description.

"I made a trip down there last Sunday to see him but my visit was limited to thirty minutes. I had a letter from the doctor this morning and he said that if he improves within the next six weeks as he has in the last five, he will be ready to come home, although after reaching home he will be compelled to stick strictly to the doctor's instructions.

"The building supply business in Youngstown has been very brisk. There is some talk that the tariff may hamper business a little, but it is what the people wanted, and, being optimistic, we look for very heavy business for the balance of the year, and have numerous prospects on file for early spring delivery."

Builders' and Pavers' Supply Company, Detroit, Mich., $30,000, incorporated to deal in building materials.

Irving Park Builders' Material & Lumber Company, Chicago, Ill., $10,000; builders' supplies; L. G. Costello, M. Goldzier, Edmund W. Froehlich.

Acme Tile Co., Chicago, Ill., $2,500; builders' specialties, construction and contracting. Hyman Soboroff, S. W. Newman, Samuel Rosenblatt.

R. B. Tufts, 702 E. Lexington St., Baltimore, Md., wants prices on crushed stone, sand, cement, brick and hollow tile for walls, etc., passenger station, Anderson, S. C.

Fischer Lime & Cement Company, Memphis, Tenn., are busy with several large structures. Royal cement signs of theirs adorn buildings on both Main and Madison.

The asbestos and roofing material plant of the H. W. Johns-Manville Co., at New Orleans, La., was destroyed by fire September 24. The loss on the building and stock is estimated at $85,000.

The Wright Lime & Cement Company, Memphis, Tenn., is busy with many medium and small contracts and are hopeful for the autumn trade which is slowly improving after a siege of dullness in that class of work.

Kanawha Building & Supply Company, of Cedar Grove, W. Va., development and construction work; capital stock, $10,000; incorporators, A. L. Sheldon, Charleston, W. Va.; E. L. Michie, J. L. Bannister, Harold P. Tompkins and A. M. Bannister; all of Cedar Grove, W. Va.

R. Humber, of Henderson, Ky., has taken charge of the Henderson Builders' Supply Company in that city, the Thornton Brothers, who own the business, having recently purchased and taken personal charge of a lumber yard at Weaverton, Ky.

To better handle the affairs of the National Builders' Supply Association, the office of that organization has been temporarily removed to Wilmington, Del., where Chas. Warner is acting as president during the illness of Edw. S. Walton. Frank J. Davis, secretary of the association, has removed to that city where he will be located until the next annual convention.

One of the new concerns of Dallas, Tex., is the Dallas Builders' Supply Company, wholesalers and retailers of building materials. They are using only automobile trucks in delivery, which enables them to not only make quick deliveries, but also about 50 per cent more deliveries than could be made by teams. The members of the concern are J. R. Neece, president; J. R. Neece, Jr., secretary and treasurer, and L. A. Painter, vice president, formerly Texas manager of the United States Gypsum Company.

All of the material miracles that this old world has instituted in the past 100 years have eclipsed those which preceded that period, and practically all of the miracles have taken place on the Western Hemisphere and in the United States of America. By far the greatest of the miracles of all ages is the growth and development of American cities. Among the first of these may be mentioned the city of Cleveland, Ohio, which less than 60 years ago was a straggling lakeside hamlet, and which is going to be the sixth city of the continent. It ranks, at the present day, among the greatest cities of the world, growing in magnificence until it is soon to become the type and sample for all of the other cities to copy after.

When the old cities of the Atlantic seaboard grew in size and accumulated importance there was little taste, little of the higher intelligence. Those old cities expressed what they were, the utilitarian ideas of a community of farmers and the people whose recent removal from the capitals and commercial centers of Europe harked back to the old countries as home, the seat of intelligence, splendor and accumulation of wealth and knowledge.

Cleveland did not begin her growth at this period of the development of the American cities. Not until after Philadelphia, New York, Boston and Baltimore had become great trade centers and big cities for those days did Cleveland show signs of expansion. The spot where Cleveland now stands was merely a beach washed by the waves of shallow Lake Erie. At the time Commodore Perry sailed his fleet from Erie to Put-in-Bay there was no light, no human habitation where the great city now stands. Over thirty years ago people who traveled extensively were wont to say "Cleveland will be 'some town' some day," and at that time when the competition of Western cities first became aggressive the citizens of many other places spoke of Cleveland in a patronizing way.

W. P. HURST, PRESIDENT, CLEVELAND MATERIAL CO., CLEVELAND, OHIO.

Thirty Years of Remarkable Growth

During the last thirty years, then, the most of the commercial growth of the city of Cleveland has been accomplished. To build such a city upon the site of a country town in the short space of thirty years is indeed a miracle that has not been surpassed by any of the story books that the famous writers of fiction have given to us as models of the work of human imagination. The growth of the city of Cleveland is really the assembling of materials, the production of human interest and the collection of hundreds of thousands of homologous individuals linked, combined and mutually dependent upon one another to make the most remarkable municipality that the world has ever known. In the growth of Cleveland there is and always has been a distinctive feature—that of a profound reverence and appreciation of the value of art in the expression of beautiful things.

Twenty-five years ago the principal residence street of that time, Euclid avenue, was famous the world round, and it is still one of the world's most beautiful residence streets. But even this has been eclipsed and pales into insignificance by comparison with the development of the extensive park system which is studded and bordered with palatial residences, each being a work of art itself. The art feature of Cleveland is being further developed by the grouping of all its public buildings which are going up with reasonable speed in the tract of land lying between the soldiers' monument and the lake. This group will consist of the U. S. Post Office and Custom House, already completed; the new city hall, county building, the new union depot, public library and several others whose construction is not yet started.

The working out of such a plan naturally involves millions of dollars and requires at least a decade to remove the materials from the quarries and the mines, from the furnaces and the workshop. But each of these buildings have been worked out on a definite plan of beauty, and when completed will surpass that period of Rome when Nero rebuilt the whole city in model from his Carrara quarries. Outside of this group of public buildings the temples of commerce in the region shows structures of burnt clay, in granite, marble and sandstone, which predominates throughout the entire business section of the city. The impression one gets is that the people of Cleveland live in palaces and transact the business of their daily avocation in temples of commerce.

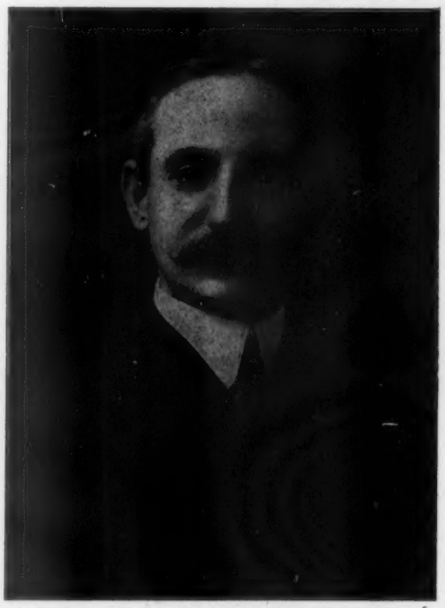
A Clean City of Wonderful Buildings and Streets.

It is a clean city. The streets and roads extending out in the county have been built at uncomparable cost to obtain the best in the world. In city streets and in country roads there are more than 1,400 miles of brick-covered highways, and the brick used has invariably been hard shale pavers, and were not selected because they were cheap, but because of the quality of highway that could be constructed with them. There are 400 miles of streets and 600 miles of road in the county that have been built in this way, so that every road leading out of Cleveland is better than the Appian Way, which has been famous for more than twenty centuries as the pride of old Rome's achievements at her most magnificent period. No captives' ransoms have fed the coffers of the modern American miracle, but the fervid energy, enterprise, taste and intelligence of her cities has provided the means as well as the will to erect and construct this magnificent achievement and example of modern capabilities.

Cleveland architects have taken the models of the first masters of Greece and Rome, the best examples of the Gothic period and the time of the Renaissance, and have improved on the models; for in Cleveland one can feast his eyes upon the pure Greek, the majestic Romanesque, the gorgeous Renaissance and the noble Gothic studies in their most refined and chaste conception, all expressed in modern materials and by modern systems of construction far better than was ever available in the ancient days when the masters studied out their slowly-drawn proportions. Cleveland already surpasses other American cities and is still working on notable lines to complete the most perfectly balanced and artistic whole for the picture city as well as the utilitarian city that has ever been given to us, and in the ages that are to come there will be writers to describe Cleveland as we have been wont to read in the classics of the splendor of Athens and Rome, so that it will take but time alone to give us American classics that will surpass those of the ancient order.

Building Supply Dealers Men of Affairs.

Naturally, as a part of all of this progress which constitutes the transformation of the country hamlet to a great city, the production and the handling of materials of construction has grown to be one of the most important factors in the whole program.



JOHN A. KLING, PRESIDENT, CLEVELAND BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

Men of affairs, intelligent and competent, have been developed and become a part of the building material interests of the city of Cleveland, and this particular branch of human activity is detected in Cleveland most intelligently, most efficiently, and most successfully. There is a spirit of harmony amongst the men who are competitors, one with another, who are furnishing the physical materials which has made Cleveland the most beautiful city that it is, for this element has not been latent in the unchecked march of progress.

In the district immediately surrounding the city are located by far the most valuable clay and shale deposits of the continent, and in the immediate county are found sandstone and limestone the most suitable and adaptable for building purposes and cheaply to be reclaimed from their natural bed. In the limestone deposits there is rock of such a quality as produces the most perfect finishing lime to be found in the world. With the growth and development of the city of Cleveland quarries have been opened, lime kilns have been erected and hydrating mills put in operation, crushing plants installed and sand and gravel pits opened and equipped. Second to the natural deposits of clay and limestone, Portland cement mills have come into operation to supply that most wonderful of all materials which furnishes to the Cleveland contractors the fireproof element which makes an investment in real estate safe for all time. In fact, the streets and the roads, the foundations and the superstructures of the modern buildings of the city have all been based on cement and concrete which is made therefrom.

The shipping by rail and by water, the loading and unloading, the teaming and the delivering of building material is well organized and well taken care of, so that Cleveland is perhaps the easiest city of the country in which to proceed uninterruptedly to the economical construction of great buildings. This organization and these men have contributed their full share of energy to the progress of their wonderful city which they are helping to make greater year by year and the most magnificent of time.

No less than six active enterprising concerns represent the builders' supply business in the city of Cleveland, who make a business of supplying all of the materials of construction by delivery on the job, with the Cleveland Builders' Supply Company, the Cuyahoga Builders' Supply Company and the Cleveland Material Company in the lead.

* * *

The Cleveland Builders' Supply Company was organized about two years ago by Caleb Gowan and John A. Kling, the latter becoming the active member of the mammoth institution. The general offices are located in the new Leader building, on Superior street, from which General Manager William A. Rossiter, directs the activities of no less than a dozen warehouses, docks, plaster mills, barns and garages. The delivery equipment consists of automobile trucks and teams, while the sales force is equipped with runabout automobiles to make outlying districts and to be ever present at the jobs to accommodate the contractors who use the materials.

AUTO SALES FORCE, CLEVELAND BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

The organization at the head office comprises a staff of experts, with effectively arranged sample rooms for the customers to inspect and make selections. One room is devoted entirely to samples of face brick and these are laid so as to show the various systems of bonding for the guidance and selection of the architect and his client. It is as convenient as a picture gallery for such a practical purpose. A separate department is for fire brick; another is for plasters. The code of the entire organization is concentration upon the point of service; the motto of the selling force is to make immediate and prompt delivery, which is sometimes incredible, and these factors have composed the system of the manager and his staff.

Mr. Jewett, head of the plaster department, is the highest authority on plaster board and interior and exterior plasters. Klingstone, one of the products of the plaster mill of the Cleveland Builders' Supply Co., is a product that has given most satisfactory results in some of the very elaborate residence properties in the suburbs of Cleveland. The writer made a tour of the park system with a view of noting the splendid effects that have been achieved in plastered exteriors in the Cleveland suburbs. Some of the best jobs are plastered with Klingstone on hollow tile; others are Klingstone covering metal lath, and yet again there are many samples of first-class exterior jobs where the Klingstone is applied to wooden laths. The product is a comparatively new one, but which has been tried out thoroughly in Cleveland first, and now they are introducing it to the trade at large. Four or five years in the Cleveland climate proves a good and sufficient test of any building material, for if it will last four years it will last four hundred. In this department another Cleveland product, National plaster board, is handled, and it has a wide sale with the demand steadily growing.

ENTRANCE TO EAST 55TH ST. WAREHOUSE, CLEVELAND BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

Harry Angel, the dean of the street sales force in builders' supplies for the city of Cleveland, is connected with the Cleveland Builders' Supply Co. Harry recalls a day before the builders' supply business, as we have it now, was born—when any teamster having a shed or barn near the railroad tracks would go into the business by ordering a few barrels of lime and a few barrels of cement. Everything was packed in cooperage those days, and they would deliver fractions of a barrel of either cement or lime according to the way the contractors might need it. This was the infancy of the industry, and Harry is not a very old man yet; he is still the "main copper of the beat" on the street and knows every contractor great and small, as well as the architects who make the specifications. He never had any trouble in his life and has been smiling continuously for forty-seven years.

The writer recalls that John A. Kling once told him that he recalled with amusement the first time he ever ordered a full carload of cement. It was the first carload order that was ever placed for the city of Cleveland, and that was not so very many years ago. Previously the custom was to order a few barrels of cement at a time and try to dispose of it before any got spoiled. When the carload order was placed, those who knew about it thought that Mr. Kling had made a great mistake and that he would never succeed in selling it all before it began to spoil so badly that it could not be used. In view of the fact that his company now buys cement by the million barrel contract, often delivering as much as a dozen carloads in a single day, this shows better than anything else the tremendous growth of the business of handling builders' supplies.

The Cleveland Builders' Supply Co., under their motto of "perfect service all the time" has compiled a system of literature on the subject of plaster and upon the use of the various building materials and specialties used by contractors in the erection of buildings, and they have gone into the

WAREHOUSE NO. 3. THE CUYAHOGA BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

plastering, the mortar mixing and concrete mixing propositions from the most practical and scientific standpoint, so that their customers are provided with the benefits of all the experience and intelligence that they are able to assemble for their use. Such information is also supplied to the architects for their guidance and to assist them in making specifications that will fit the materials that have to be used in actual construction work in the Cleveland market. The specialties department of the Cleveland Builders' Supply Co. is perfect to the last possible item that the contractor can call for.

When the salesman of the Cleveland Builders' Supply Co. approaches a job the whole thing is present; every part of the job taken care of, and with the long line of teams and automobile trucks and with Will Rossiter's vigilance at the throttle, the deliveries often move out within a few minutes after the order is on the note book of the salesman and even before he reaches the office.

The yards and warehouses of the Cleveland Builders' Supply Co. are substantial, permanent structures, the first of the kind to be built by any concern handling builders' supplies. The warehouse space used for the storage of cement, lime, and plaster is carefully designed so as to be dry and in every way fit for the use to which they are to be devoted, their buildings all having been designed with that purpose in view.

* * * *

The Cuyahoga Builders' Supply Co., was organized about three years ago and have their general offices in the Schofield Bldg. W. A. Fay is president and general manager, and Earle Ross is secretary and treasurer. The concern recently erected four new warehouses in sections of Cleveland demanding the major portion of building materials, and each of the warehouses is provided with barn facilities, for both Mr. Fay and Mr. Ross are firm believers in the efficiency of the old-fashioned Missouri mule for the delivery of construction necessities.

Mr. Ross is the systematizer who sits back of the row of telephones connecting his desk with the warehouses and from this operating table he places the teams and keeps record of their movements like a train dispatcher checks off the movements of trains on a railroad. Their offices are commodious, with convenient show rooms where face bricks of every description are exhibited together with samples of a full line of contractors' specialties.

Mr. Fay is an indefatigable worker and keeps an automobile constantly in commission to keep him on the firing line personally, providing actual personal contact with the salesmen at every hour of the day. This concern has always enjoyed a large share of the business in Cleveland and have a long list of contractors who depend on their service for supplies.

The company has several high-class salesmen; nearly all of them have spent a considerable portion of their lives in the builders' supplies business. Each one of these salesmen is furnished with an automobile to cover his territory.

The brick and clay department is in charge of John F. Leonard, who has successfully followed this line for years.

Frank Aulenbacher specializes in sewer pipe, cement and large orders for the company.

The Cuyahoga Builders' Supply Company handles the celebrated "New Castle" brand of Portland cement, as well as the products of the Darlington Brick & Mining Company and the Alliance Brick Company, and is also the local exclusive agent of the American Sewer Pipe Company and the Eberling Cement Tile products.

The officers of the company report a very successful year, with indications of a substantial expansion in the use of its products during the coming period of building projects.

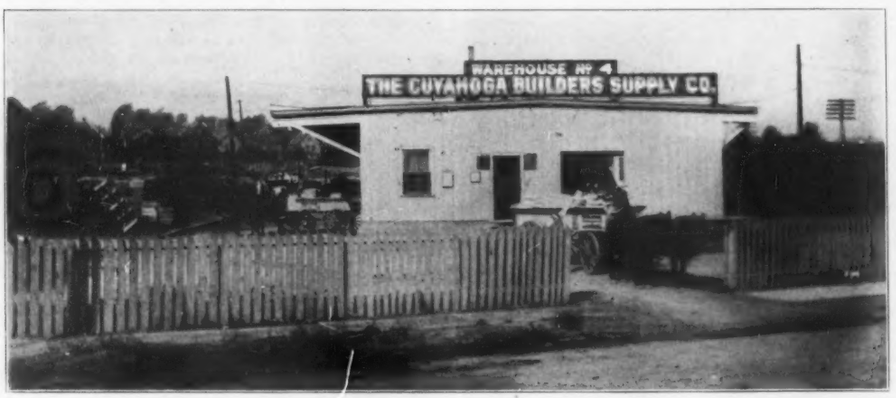
* * * *

The Cleveland Material Co., was organized about four years ago by W. P. Hurst, Collier, Emery and associates and has enjoyed a very prosperous and growing business from the starting day. This concerns owns and operates the sand and gravel pits of Pelee Island in Lake Erie and has a washing and screening plant at the B. & O. docks equipped with two locomotive cranes for storing and reclaiming sand and gravel and loading same to cars or to wagons. The steamship Stafford plies steadily between this plant and the island. The plant is located right at the heart of the principal city deliveries. Pelee Island sand and gravel is an extremely high-grade product and enjoys the preference for all the high class work. The Cleveland Material Co. handles a full line of face brick and clay products as well as cement, lime and plaster and a full line of contractors' specialties. It maintains twenty-four teams and four auto trucks to take care of the deliveries of building materials to its customers. W. P. Hurst is a young man, a Virginian by birth, educated as a railroad man, so that the transportation of heavy materials has come to be a matter of second nature with him. Socially "Billy" Hurst is popular and a magnet of good fellowship. He celebrated his thirty-first birthday on September 29th, with a stag party at his home to which a big roomful of his companions and business competitors were invited. He is a long-headed young man, full of sound business principles that are telling in the success his concern is achieving in the great Cleveland market. Mr. Hurst was primarily a concrete aggregate man and has made such a study of that business as to be really an authority on the subject of the materials that go to make good roads, foundations, street base, and all such purposes for concrete that has been used so extensively in the improvement of Cleveland streets and Cuyahoga county roads.

* * * *

In each of these concerns the systematic study of prompt delivery has built up for them dependable reputations which the contractors have found the basis of their own success, and this is the chief

DELIVERY SERVICE OF CLEVELAND BUILDERS' SUPPLY CO., CLEVELAND, OHIO.



WAREHOUSE NO. 4. THE CUYAHOGA BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

explanation of the leading position which they hold as handlers of the materials of construction.

* * * *

Cleveland is the headquarters of the Kelley Island Lime and Transport Co., without doubt the largest producers of lime, hydrated lime, crushed rock and other crusher products in the world. Lawrence Hitchcock, the general manager of this concern is one of that type of men who never stops growing, because he never quits studying his business and the factors that are involved therein, operating the largest hydrating plant in the world, producing the celebrated "Tiger" brand of finishing hydrate. Mr. Hitchcock is reaching after other achievements in the hydrating field by selling ready-mixed hydrate with sand and other products so as to economize the cost to the contractor and make more and greater buildings in Cleveland and other places possible. "Tiger" brand hydrate is sold from coast to coast and is quite as familiar in St. Louis as it is in New York or in its home city.

W. A. FAY, PRESIDENT, CUYAHOGA BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

At the recent convention of the National Paving Brick Manufacturing Association, held in Cleveland, Ohio, we were surprised to learn of the remarkable advance that had been made in Cleveland and Cuyahoga county in the use of mannufactured paving joint, which has almost entirely supplanted the old method of wood strips and the pouring of hot material in that vicinity. Miles of the finest paved road in the land were shown in which the B. & B. Expansion Strips were used with universal success. Many evident advantages are claimed for this strip over the old method of pouring, and the results shown are conclusive proof of these claims.

WAREHOUSE NO. 2, THE CUYAHOGA BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

Some of the most prominent paving engineers of the county are enthusiastic in their recommendation of this strip. In the first place this method of providing an expansion joint assures the engineer that he will get a perfect expansion joint, the full depth required, and one that can be depended upon in winter and summer. The composition of this strip is such that it will not melt or run under the excessive heat of summer and is elastic in the coldest part of winter.

Contractors gladly use this strip as they find it to their advantage in convenience and the saving in labor, as well as giving them a well-finished and first-class job.

B. & B. Expansion Strip is manufactured in convenient lengths for shipping and handling on the job, and of depth and thickness to suit the requirement of the work. The ends are beveled and can be laid to make a continuous joint the full length of the pavement.

The product is of an asphaltum-like composition with metal reenforcement and contains nothing that will deteriorate with age, nor will it disintegrate when placed in the ground or exposed to the weather.

To James Banwell, a paving contractor of Cleveland, is due the credit of inventing the B. & B. Expansion Strip, for which a patent is allowed.

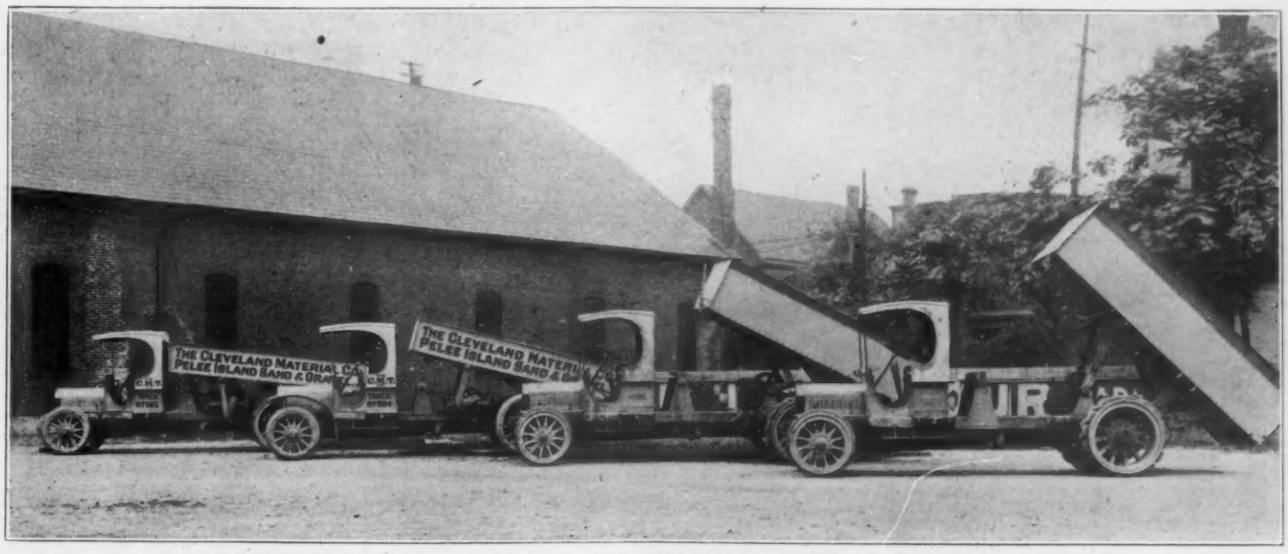
Mr. Robert L. Beck, for many years prominent in the builders' supply business in Cleveland, Ohio, is associated with Mr. Banwell in the manufacture of this product and is the exclusive selling agent. Messrs. Banwell and Beck are to be congratulated for the remarkable success they have made in the manufacture and sale of this new paving joint, and when one considers the vast field for a high-class article of this kind, we cannot but prophesy a business of large proportions in the near future.

* * * *

The illustration on the next page calls attention to a new and growing source of profit to the building supply dealer in selling materials for "over-coating" old buildings.

This building was an old frame market house standing at the corner of Broadway and Canton Street, Cleveland, Ohio. It was dirty, unsanitary, an eye-sore to the community and practically useless.

To Architect Ed A. Ruggles the city of Cleveland assigned the task of remodeling this structure. Without removing the wood siding the entire outer surface was covered with expanded metal lath and plastered with Klingstone base coat and Klingstone white float finish. Thus, an unsightly old building was transformed at a comparatively low cost into a



AUTO-TRUCK DELIVERY EQUIPMENT OF CLEVELAND MATERIAL CO., CLEVELAND, OHIO.

WAREHOUSE NO. 1, THE CUYAHOGA BUILDERS' SUPPLY CO., CLEVELAND, OHIO.

handsome new one, and old Broadway Market House now sits smiling in its new dress of Klingstone.

The Cleveland Builders' Supply Company, who furnished the materials for this operation, report that this is only one of a number of similar jobs of over-coating old buildings which they have had in the past year.

* * * *

A steady progress in the manufacture and use of highly efficient waterproofing and decorative coatings for cement, stucco, brick and stone walls is noted by the success of the products manufactured and marketed by the Billings-Chapin Co., of Cleveland. The increased demand by dealers for Billings-Chapin's "Driwal" coatings is a result of proven success and efficiency in their use on the Cuyahoga County Court House, at Cleveland, and on many other public and residential buildings.

All "Driwal" coatings are liquid, and are applied to the surface, not to be mixed with cement. They become effective by penetrating into and filling the pores of the cement with insoluble material, and they do not lay upon the surface nor form a continuous film, nor obscure the texture of the surface. "Driwal" coatings, by penetrating below the surface, acomplish the most satisfactory results. There is not the slightest possibility of peeling or cracking, and in no way is the cement injured. They can be applied, except against pressure or in the constant presence of water to new as well as to old concrete. They are water, weather, alkali and acid-proof. They will not freeze and can be applied in winter as well as in summer. They have proved equally effective on plaster, brick and stucco. The utility of these coatings is increased by the fact that they are lime-proof.

* * * *

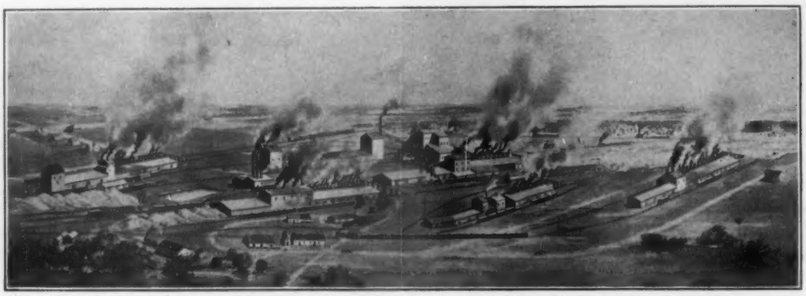
Pointing with pride to quality and service elements as factors responsible for progress, the Crescent Portland Cement Company, of Wampum, Pa., marks the most distinctive attribute of its product as serviceability.

Quality, the basis of the product, and service, the basis of the organization, have provided an operative slogan for both production and selling of Crescent Portland cement. The product itself has proven the far-reaching results of the basic principles of the manufacturer. A firm confidence has thus been established with both the dealer and the user. Extensive publicity has been obtained through the establishment of this confidence.

The continued progress of Crescent is shown by an approximate production of over one million barrels annually.

Through extensive co-operation with dealers the Crescent Portland Cement Company has carried on an educational campaign of incalculable value to the users of this product. In every department of the organization there is evidence of a constant desire to be of the greatest service possible where development work is under consideration. The steady demand for the product of the Crescent Compay is but a small example of the possibilities of a sound and logical foundation of production and organization.

In the cement industry, as in all others, there is shown a desire for a better realization of necessary products of merit and organizations rendering adequate service. The number of buildings and examples of general construction work in which Crescent Portland cement is used fully proves the arguments of the manufacturer both as to quality and service.



PLANT OF KELLY ISLAND LIME & TRANSPORT CO., WHITE ROCK, OTTAWA COUNTY, OHIO.

* * * *

The National Plaster Board Company, of Cleveland, Ohio, was organized in January, 1911, John A. Kling being president, M. B. Jewett vice-president, and A. N. Kellogg secretary. The factory space was leased at Cleveland and the company began operations there in March, 1911. Owing to the growth of its business, the present large factory plant was erected at Gypsum, Ohio, and put into operation July, 1912. The general office of the company is at 1408 Rockefeller building, Cleveland, Ohio.

The particular quality in "National" brand plaster board which appeals most strongly to dealers and laborers is its strength, as this board can

OLD MARKET HOUSE, BROADWAY AND CANTON ST., CLEVELAND, OHIO, OVERCOATED WITH "KLINGSTONE."

Concrete Bridge, Monessen, Pa.: 5,000 bbls. Crescent Portland Cement Used.

be shipped and handled with practically no breakage. It also makes a firm bond with the plaster and has an excellent nailing quality. These points

Concrete Paving, Jefferson, Ohio; 11,000 bbls. Crescent Portland Cement Used.

have led to a rapid increase in the volume of the company's business.

"National" brand plaster board is made primarily as a lathing material, and the National Company believes that the most satisfactory wall is that made with two coats of plaster on plaster board. A great deal of the board, however, is used as a substitute for both lath and plaster and for miscellaneous purposes, such as lining summer cottages, attics, farm

Concrete Highway Bridge, Lawrence County, Pa.; Crescent Portland Cement Used.

buildings, making factory partitions, etc. Owing to the company's present large capacity, it is in position at all times to make prompt shipment of plaster board in any quantity.

* * * *

Cleveland is the home of A. Y. Gowan, vice president of the Lehigh Portland Cement Co., whose western sales office is located in Chicago; and Mr. Gowan, although a busy man, finds time for the social side of life as owner of the celebrated "Speejacks," champion power yacht of the Great Lakes. In a recent amateur race with Mr. Gowan at the wheel, the Speejacks demonstrated a su-

Larkin Building, Buffalo, N. Y.; 58,000 bbls. Crescent Portland Cement Used.

perior speed over all competitors. Such a yachtsman and active business man is a primal force of activity of the Big Lehigh in the West.

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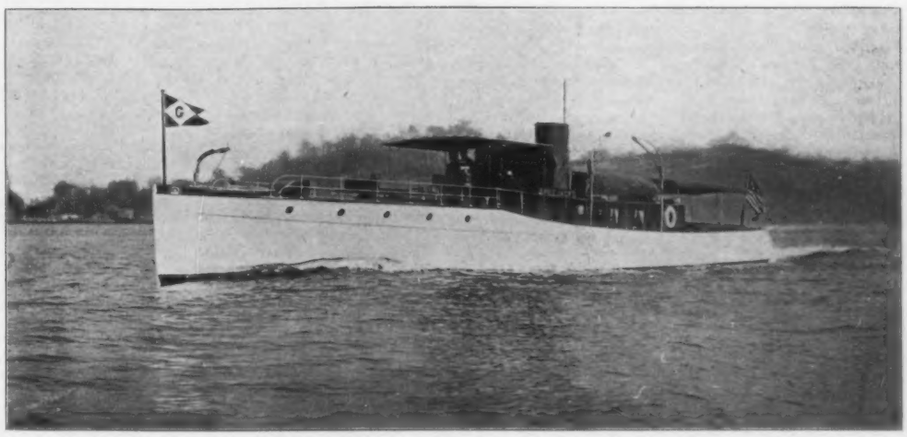
From Cleveland to Akron is only a short hour's ride, and Akron is the center of the clay working activities of the great Ohio shale deposits. This is the home of the American Sewer Pipe Co., and of several of the paving and face brick concerns which supply Cleveland and the balance of the world with the highest clay products.



"SPEEJACKS," CHAMPION OF WESTERN WATERS, PROPERTY OF A. Y. GOWAN, CLEVELAND, OHIO.

Canton, in Stark county, a short distance further out from Cleveland, is also a clay working center; and at Youngstown, which is on a path between Cleveland and Pittsburgh, is located the Bessemer Paving Brick Works. All of these centers contribute to the Cleveland market with their supplies of high-grade building materials.

* * * *

Lehigh Portland cement from the Newcastle plant; New Castle Portland cement manufactured at New Castle, Pa., Cresson Portland cement, manufactured at Wampum, Pa., and Superior Portland cement manufactured at Superior, Ohio, are supplied in large quantities to the Cleveland dealers.

* * * *

One of the largest plants of the American Steel and Wire Co., where their wonderful Triangle Mesh Reinforcement for concrete is made, is located in a Cleveland suburb. There are a long list of steel products manufactured in Cleveland and in the district immediately surrounding the great city, for Cleveland is one of the great steel centers of the country, and among which may be mentioned the Ohio Ceramic Engineering Co., builders of industrial cars, tracks and equipment for clay working and plaster mills of every description.

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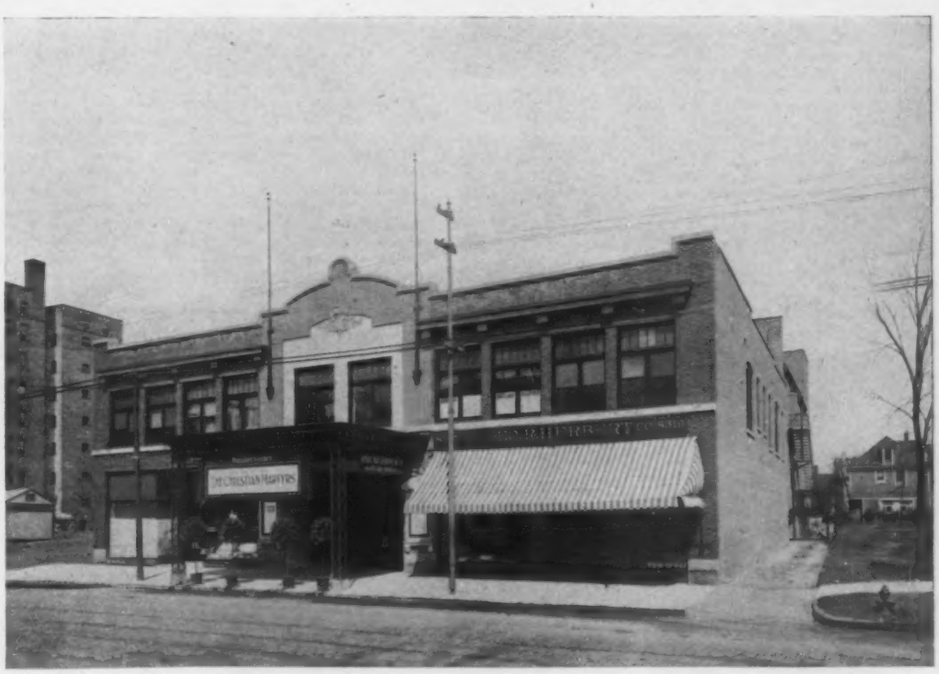
C. O. Bartlett & Snow Companies, elevating and conveying machinery for cement and plaster mill outfits, are well known to the trade in all parts of the country.

* * * *

The advantages of the brick-paved streets of Cleveland and the brick-paved roads of Cuyahoga County were demonstrated to ROCK PRODUCTS' representatives by the courtesy of W. P. Hurst, who provided an automobile and personally conducted a tour of over 20 miles of these brick-paved streets and roads. Nor did he overlook the fact, in conducting this tour, that in many places in Cuyahoga County roads are in as bad a condition as in other parts of the United States. The purpose, however, was to show the results obtained with brick roads of the various types.

Inasmuch as Cleveland and vicinity is the heart of the paving brick manufacturing industry, and the home of the National Paving Brick Manufacturers' Association, the demonstration was, indeed, an interesting one. Here we came in contact with different road surfaces obtained from different varieties of road-making brick—particularly noticeable were the types of brick preferred for heavy traffic and that of the road containing the ordinary and average paving brick. The wonderful results obtained on these streets and roads with brick surfacings certainly stands as a monument to the great industry which is centered in this vicinity. As the home of the National Paving Brick Manufacturers' Association the city of Cleveland can point with pride to the exceptional amount of interest procurable from such a source as her city and county roads.

It is perhaps well to relate the fact that in the manufacture of paving brick, Frank B. Dunn, president and inventor of the Dunn wire-cut lug blocks, is one of the leading lights of the industry. The product manufactured by Mr. Dunn's company is known throughout the entire United States as the perfect type of vitrified brick for paving purposes and has fulfilled many of the requirements of roads



KNICKERBOCKER THEATRE, CLEVELAND, OHIO. "NATIONAL" BRAND PLASTER BOARD USED.

and streets in Cleveland and such others Ohio cities as Canton, Akron and Youngstown. The Dunn wire-cut lug blocks are manufactured at Conneaut, Ohio, and also by such well-known brick manufacturers as the Deckman-Duty Brick Company, of Cleveland; the Metropolitan Paving Brick Company, of Canton; the Bessemer Limestone Company, of Youngstown, and numerous other manufacturers in Ohio, Indiana and all of the states of the central west.

After all has been said of paving bricks and brick-paced streets and roads, we are brought to an immediate realization of the efforts of the men who are responsible for the activities apparent from the promotional point of view. Will P. Blair, of the National Paving Brick Manufacturers' Association, with headquarters at Cleveland, reflects, in a measure, the real reason for the rapid progress of the industry. When Mr. Blair is absent from the center of activity, it is our pleasure to find his chief of staff, H. H. McDonald, energetically and loyally shouldering the responsibilities of the association's welfare. Every manufacturer of paving brick who knows of the benefits derived from the work of their National Association knows full well of the value to such an organization of such men as Mr. Blair and Mr. McDonald. "Mac" is always there in the interest of the paving

LINEUP OF AUTOS ON INSPECTION TOUR OF CLEVELAND'S BRICK-PAVED STREETS.

brick, whether it be at his desk at headquarters, or out on the highway showing prospective road builders the utility of brick paving blocks as products of merit.

* * * *

The Superior Portland Cement Company, maintaining offices and sales department in Cincinnati, finds the city of Cleveland one of the principal distribution centers of its product. Through their Cleveland representatives, the Cleveland Material Company, the manufacturers of Superior Portland cement are in constant touch with the market conditions of the vast territory of which Cleveland is the logical and most adequate shipping center. The mills of the company are located at Superior, in Lawrence county, Ohio, and have an annual capacity of 800,000 barrels. Many features of the product are available from the source of expert management and every barrel manufactured is perfect. For that reason the product is becoming better known among cement users.

LINCOLN HIGHWAY PLANS PROGRESSING.

Enthusiastic Leaders Making Energetic Promotion Campaign.

Contributions to the proposed $10,000,000 fund for the construction of the Coast-to-Coast Lincoln Highway are growing daily, and the great project is now an assured success.

Our citizens who are spending millions of dollars in touring abroad, looking for beautiful scenery, will be able to tour from the East to the natural Western splendors of our own great country. A highway which leads "from somewhere to somewhere," which permits them to "See America First" is the one thing needed to turn this tide of travel and keep these millions of dollars at home.

Where in Europe can such wonderful scenery be seen as is to be found in Colorado, Utah, Arizona, Wyoming or California? Where can such fishing or shooting be found as in the Rockies or the Sierras? Nowhere but on this continent will they find the broad expanse of cultivated lands and vast orchards.

We all talk of these things, but few of us have ever seen them. The Lincoln Highway will make this possible; will permit us to secure the full measure of value and use from our motors; will permit us to tour from Coast to Coast in comfort and without reference to time tables.

The directors of the Lincoln Highway Association, who are leading the enthusiastic supporters of the project towards this hoped-for goal, are: Henry B. Joy, president, president Packard Motor Car Co., Detroit, Mich.; Carl G. Fisher, vice-president, president Prest-O-Lite Co., Indianapolis, Ind.; A. R. Pardington, vice-president and secretary, New York; Emory W. Clark, treasurer, president First National Bank, Detroit, Mich.; Russell A. Alger, president Alger, Smith & Co., Detroit, Mich.; Ray D. Chapin, president Hudson Motor Car Co., Detroit, Mich.; F. A. Sieberling, president Goodyear Tire & Rubber Co., Akron, Ohio; A. Y. Gowan, treasurer Cleveland Builders' Supply Co., Cleveland, Ohio; Paul H. Deming, The George Worthington Co., Cleveland, Ohio; Albert J. Beveridge, Indiana, and John H. Willys, president Willys Overland Co., Toledo, Ohio.

The statement of the purposes of the association, which has been drawn up as a proclamation, contains a number of noteworthy features. One is that this highway is to be made of concrete wherever practicable. Another feature of interest is the insignia which is to mark the highway. This insignia consists of red and blue bars at the top and bottom respectively, with a large "L" in the center, surrounded by the words "Lincoln Highway."

The further development of this great undertaking will be watched with interest by all patriotic American citizens.

A business man in Australia informs an American consul that after several years' experience with a local firm he has severed his connections and has established himself in the building business. He desires to be placed in touch with American manufacturers of building material of all kinds, and remarks that the possibilities of that trade are enormous. The inquirer is said to have a full knowledge of the trade in all its branches. Address No. 11,854, Bureau of Foreign and Domestic Commerce, Washington, D. C.

Construction in the big cities has come to be an art. The construction of the New York Rapid Transit Subway goes on while immense traffic passes over it each day. A new piece of tunnel is being put in between Union Square and 25th on Broadway by the E. E. Smith Construction Co. of New York and Philadelphia. They will handle all that rock and earth at night, and as a result it will not interfere with traffic at all. The readers of ROCK PRODUCTS who are familiar with the activities of that principal street known as Manhattan Island will marvel at this, as they have in times past, for it is really a miracle. Fifty thousand barrels of Vulcanite cement will be used in its construction.

TRADE LITERATURE.

Anyone having waterproofing problems to handle will be interested in a booklet recently issued by the Ceresit Waterproofing Company, Chicago, Ill., entitled "Waterproofing." The booklet contains 12 illustrated pages wherein the uses of Ceresit in different phases are taken up, such as "Scientific Explanation," "Test Reports," "Specific Records of Use," "Testimonial Letters," and "The Clincher."

* * * *

The Standard Scale & Supply Co., of Chicago, has issued a 32-page illustrated booklet of the Low Charging Concrete Mixer, which is a complete presentation of the "Standard" mixer equipment line. An interesting feature of this catalog is the specific detail showing mixers with a folding platform and cart chargers.

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A 188-page catalog has been issued by the Standard Scale & Supply Company, of Chicago. The complete line of Concrete Mixers and Contractors' Equipment manufactured by that company is shown in this book in a very comprehensive manner. Descriptions in detail accompany the different models illustrated. Builders' hoists, gasoline engines, diaphram pumps, builders' derricks, rock crushers, etc., are also described.

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"The Ring is the Why" is the subject of a 20-page booklet issued by the American Pulverizer Company, of East St. Louis, Ill. In the pages of this booklet are set forth comprehensive descriptions of the American Ring Pulverizer. The booklet is complete in detail as to illustrations of the machines and sectional views of construction. It also contains testimonial letters from many users of the American Ring Pulverizer.

* * * *

The Owen Bucket Company, of Cleveland, Ohio, recently issued interesting booklets describing their clam shell buckets and material handling machinery. "Owen Buckets in Operation" is the title of a handsomely printed and illustrated 34-page booklet showing specifically the extensive utility of Owen clam shell buckets, "insuring a bigger day's work." "Owen Clam Shell Buckets" appears on the title page of a handsome 26-page catalog describing in detail the mechanical construction of each machine and embodying the principles of operation. All machines are handsomely illustrated in mechanical detail.

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The Trus-Concrete Steel Company, of Detroit, Mich., have issued to the trade a complete and comprehensive catalog of the Kahn building products, this catalog being the sixth edition. Illustrations and descriptions in this catalog show the extensive utility of united steel sash.

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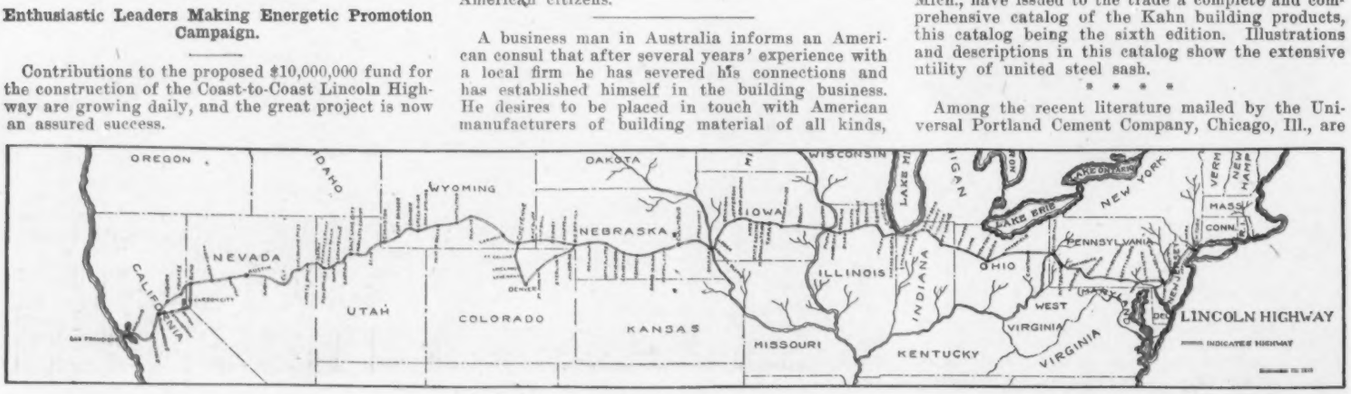
Among the recent literature mailed by the Universal Portland Cement Company, Chicago, Ill., are



ROUTE OF THE PROPOSED LINCOLN HIGHWAY.

booklets entitled, "Small Concrete Bridges and Culverts," "Cement Drain Tile," and "The Farm Cement News." Each booklet is handsomely printed and illustrated and covers in a comprehensive manner the subjects referred to. Many educational features appear in the pages of these booklets.

AN IMPORTANT IMPROVEMENT IN A WIDELY USED MATERIAL.

A number of years ago when Hy-Rib was introduced on the market by the Trussed Concrete Steel Company of Detroit, builders generally recognized that an important time and labor saver was placed at their disposal for construction work. Hy-Rib is a deep-ribbed steel sheathing in which the ribs and the lath between are formed from the same sheet of steel. No forms are required when Hy-Rib is used in reinforcing concrete floors and roofs, while in partition and ceiling work, the ordinary steel channels are eliminated, as well as the expense of

Since the introduction of Hy-Rib, the Trussed Concrete Steel Company have been continually experimenting in a practical way to determine a method of still further increasing the economy and efficiency of this type of construction. The Seven-Rib Hy-Rib illustrated above is the result. This Hy-Rib is 24 inches wide, being over twice as wide as the Four-Rib Hy-Rib which it replaces. The ribs are also considerably deeper, being 1 inch deep, and in this way the material is greatly stiffened and permits of a wider spacing of supports. The Seven-Rib Hy-Rib is manufactured in four gauges, Nos. 22, 24, 26 and 28, and standard lengths of 6, 8, 10 and 12 feet.

There are now three distinct types of Hy-Rib at the disposal of builders. The Seven-Rib Hy-Rib is most generally useful in construction work, particularly in floors and roofs, as well as ceilings and for high walls and partitions. Deep-Rib Hy-Rib has ribs one and one-half inches deep, giving exceptional stiffness and making it particularly adapted for longer spans in floors and roofs and for heavier loading. In the Three-Rib Hy-Rib the ribs are spaced seven inches apart, securing the maximum economy in reinforcement. It is particularly adapted for the general run of construction work for partitions and sidings, giving ample strength for this purpose. All three types of Hy-Rib are manufactured in various thicknesses of metal, so as to fully meet every possible requirement of construction. Complete information and literature in regard to the Hy-Rib reinforcement, as well as suggestions for any particular work, will be gladly furnished by the Trussed Concrete Steel Company, Detroit, Mich.

A WORRELL DRIER FOR SOUTH AMERICA.

The picture on this page shows the riveted steel sheet and heavy plate work of one of the rotary driers just shipped to South America by S. E. Worrell, Hannibal, Mo., the manufacturer of rotary fire driers. As will be seen in the illustration, special rolling screen attachments are bolted to the drying cylinder which, with the discharge, makes four different sized separations of the product with but little motive power and extra floor space, and at less than one-third the cost of a separate screen and its necessary connections. They are especially adapted for separating fine gravel, pebbles and boulders from sand and discharging all of them into different receptacles.

By handling thoroughly dry products a larger capacity and more uniform separation than the usual independent and complicated rolling screens with a much larger perforated area is given and they don't clog up.

Mr. Worrell has been attaching these to his indirect rotary driers for a wide variety of materials for over thirty years, to the entire satisfaction of his customers.

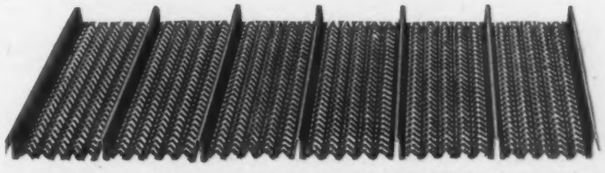
The company perforate the steel sheets with any size holes from $\frac{1}{16}$-inch in diameter up and thus fit one machine for drying and screening in the same operation two or three entirely different products, both in size and substance, without the slightest change or having to stop them.

The letters and figures shown designate the different parts and are especially handy for ordering repairs which, fortunately for the users, are seldom required. Some of the first evaporators built thirty-four years ago are still in operation with a small outlay for repairs.

The numerous smaller rivets seen on the cylinder are for rigidly securing the numerous interior steel angles for lifting the product, and add greatly to its stiffness, thus relieving the large body seam rivets and plates of the sharing strains and enables the maker to use considerably longer cylinders in proportion to their diameters, as the picture shows. This increases their capacity and fuel efficiency to an appreciable extent.

The business of Mr. Worrell shows a substantial improvement over the past year and the reduction of the present high Canadian tariff to our reduced rate will greatly increase his trade to that country, Mr. Worrell states. The export business has been an important factor in the development of his present important institution and the firm of S. E. Worrell, established in 1879, has long since had a world-wide recognition.

G. P. Grimsley, Ph. D., mining and consulting geologist, of 1105 Wyandotte building, Columbus, Ohio, is engaged at the present time in the examination of and report on Kaolins and china clays of western North Carolina for Eastern capitalists. Mr. Grimsley recently completed tests and the report on building and paving brick clays near Martinsburg, W. Va.



SEVEN-RIB HY-RIB, MANUFACTURED BY THE TRUSSED CONCRETE STEEL CO., DETROIT, MICH.

ROCK PRODUCTS had the pleasure of stepping off the train at Youngstown, Ohio, the other day to stop at the New Ohio Hotel, which is a peach and modelled somewhat after the Hotel Astor in New York. Youngstown has long needed a good hotel, and like everything else they do in that great steel city, when they finally get around to it, they do right.

Genial hearty Eddy Holway of the Youngstown Ice Co., who is doing all the work of the big jobs which Teddy Walton and he usually do when Mr. Walton is well enough to be on the job, extended that wholesale welcome which is peculiarly and distinctively a Youngstown attribute. They say in Youngstown that it is the biggest little city in the country and growing mighty fast, and it really is, and that is the reason why the office of the Youngstown Ice Co., is always such a busy place. Their teams and automobiles are supplying the building materials efficiently and systematically in the growth of what was a little town a few years ago to what will be a big city in the very near future. Youngstown is the rival of Pittsburgh in the tonnage of the steel products which she produces, and Youngstown's output is growing more rapidly than Pittsburgh's.

The Youngstown Car & Manufacturing Co. is a concern which manufactures a very high grade quarry car and other quarry equipment. Their product is being very well received and highly appreciated by the quarrymen.

Youngstown Wire & Iron Co., is a new concern under the management of John J. O'Neill, manufacturing ornamental iron trimmings for buildings, which they make to order and by specification for dealers in building material specialties.

Daniels & Osmont, engineers, have completed specifications for sidewalk, street and sewer improvements at the new town of Solano City, in a new irrigation district north of San Francisco. The estimated cost is $465,000.

Allis-Chalmers Manufacturing Company announces the removal of the sales and engineering offices of their mining machinery department from Chicago, Illinois, to the Milwaukee works at West Allis, which took place the first part of October. The Chicago shops will also be removed to Milwaukee in the near future. The advantages to be gained by concentrating all departments, both commercial and manufacturing, at one plant are the reasons for this move.

The Foy-Proctor Company, a leading concrete and engineering firm of Nashville, was recently awarded the contract for the construction of the West Main street viaduct at Lexington, Ky. The bid was around $5,000. The work is to be completed by January 1, 1914. The structure is to be built by the city of Lexington and the railroad jointly. The viaduct is to be approximately one thousand feet long and forty feet wide and is of handsome design.

"The Strength of I-Beams in Flexure," by Herbert F. Moore, has just been issued as Bulletin No. 68 by the Engineering Experiment Station of the University of Illinois, Urbana, Ill. The formulas commonly used by architects and structural engineers for determining the load-carrying capacity of structural steel shapes are, in general, based on the common theory of elasticity and the tensile strength of structural steel. In figuring the strength of I-beams under transverse loads it is the usual practice to consider only the direct flexural action. Transverse tests of I-beams have not been numerous, and the results of such tests have not been widely used. It is known that besides direct flexural action in an I-beam there are also sidewise bucking action and stresses in the web. In this bulletin these secondary effects are discussed and tabulated summaries given of the results of tests of I-beams at Illinois and elsewhere. From the results of tests the conclusion is drawn that in considering direct flexural action of I-beams the yield-point strength of the material must be regarded as the ultimate fiber stress for the beam. From the results of tests proposed formulas for strength against sidewise buckling and for strength against web failure are deduced. Copies of Bulletin No. 68 may be obtained upon application to C. R. Richards, Acting Director of the Engineering Experiment Station.

A WORRELL DRIER FOR SOUTH AMERICA.

Getting On

By Frank Adams Mitchell.

I.

Yes, sir, this is a good seegar; the box is over there;
It says Havana on it, and the best found anywhere.
Jest help yourself. Pull up a chair. I'll shake the fire a bit,
And tell you where they come from after your seegar is lit.
It is fine autumn weather, and I'm feelin' powerful good;
I've got the crops all gathered, and I've hauled my winter wood;
But one thing I'm chock full of, and I'm glad you come this way,
So I c'n tell you all about th' news I got today.

II.

Y' recollect that son o' mine who went down East to school,
Th' neighbors 'lowed 'twas wasted time, and said I was a fool;
Waal, after George had finished up and got his sheepskin too,
He went up to th' city, like th' farmers' boys all do.
He got a job at keepin' books, er some such work as that,
And boarded with some fellows that he knew down at the frat;
The wages wasn't high, but seemed to keep him pretty well,
George said he reckoned it would do him good t' starve a spell.

III.

He got a good position in another year or two,
Jest like I'd been expectin', fer he'd make it go, I knew;
And step by step he worked along and slowly made his way
Until—waal, here's the letter that I got from him today.
"Dear Dad"—y' know he's called me that sence he began t' crawl,
His mother used t' think it was th' cutest thing o' all;
Waal, let me get my specs, and then I'll read th' rest of it,
My eyes are gettin' old, I guess, and this is closely writ.

IV.

"Dear Dad," he says, "the best thing yet has happened here today,
I've got a whole department, and another raise in pay;
I've been to see the President, and threshed the whole thing out,
He said he'd take me in the firm within a year, no doubt.
I'm sure you're glad to hear it, and I wanted you to know
I'm on the road to fortune, though it's kind o' rough and slow;
But what success I make of life was started by my dad,
Who never thought a wrong thought and never said a bad."

V.

The farm is mighty lonely with the boy up there in town,
But I thank the Lord I've got him every night as I lay down;
And a letter like I read to you is worth a mint o' gold
And ten times over to a man when he's agettin' old.
This winter when the work is slack, I'm going up a spell,
And see if city life is like the tales I've heard 'em tell.
Will George be glad t' see his dad? Well, you jest wait and see;
I'm a plain, backwoods old farmer, but George ain't ashamed o' me.

THE ATTRACTION.

Advertising is such an art, says a publicity expert in the Washington Star, that many people actually buy periodicals as much for the advertisements as for the reading matter.

"I sat in an editor's office the other day when a poet entered.

"'Glad to see you've accepted that sonnet of mine,' the poet said, feverishly pushing back his long hair. 'I hope it will be widely read.'

"'It's sure to be,' said the editor. 'It's sure to be. I've placed it next to one of our most striking ads.'"

THE LIMIT.

After citing numberless ills and receiving the physician's prescription, she finally arose to leave the office. As she reached the door she turned around and remarked slowly: "And, doctor, I hear strange sounds in my ears."

"Well, where else do you expect to hear them?" answered the tired physician.

—Brooklyn Life.

DISPOSITION.

One of the big railroad lines has a regular form of reporting accidents to animals on its line. Recently a cow was killed and the track foreman drew up the report. In answer to the question, "Disposition of carcass?" he wrote: "Kind and gentle."—Our Animals.

BRAVE TO RECKLESSNESS.

Amy Teur—"I thought, my dear Count, that you were a judge of music. I wonder at the applause you bestow upon that man's efforts; his singing is abominable."

Count Dorame—"Ah, madame, it is not his voice I so admire. It is his bravery. Bravo! Encore!"—Exchange.

The duty on diamonds, playing cards and false hair has increased 10, 20 and 57.95 per cent respectively. Thus doth the cost of living soar.

DISCUSS WEIGHTS AND MEASURES ACT.

Forty sealers of weights and measures from counties and cities of Pennsylvania that have taken advantage of the legislation aimed at fraud in the use of scales and measures, met in the capitol at Harrisburg on September 24 to discuss plans for the coming crusade directed to this end, and decided to put a stop to the use of the combined measures on January 1, 1914. The combined measures contain space for various quantities in one vessel. All dry commodities, when sold in bulk or from bulk, shall bear distinct letters and figure the capacity thereof. If such measure be of the capacity of one-half bushel or less, it shall be marked in terms of a quart, dry measure. If the measure be in the capacity of over one-half bushel, it will be marked in terms of a bushel. Section Six of the new law says that whenever lime, sand or cement be sold by the bushel, the bushel of such commodity shall consist of the respective number of pounds herein set forth: Lime, seventy pounds; cement, one hundred pounds; and sand, one hundred pounds. The act goes into effect January 1, 1914, but provides, however, that no penalty shall be enforced for any violation of its provisions as to domestic products prepared, or foreign products imported, prior to eighteen months after the date of its passage, July 24, 1913.

CEMENT IN THE PHILIPPINES.

The Philippines will soon manufacture their own cement. Supplies heretofore have come chiefly from Hongkong. A large mill is being erected about thirty miles from Manila, where raw material is abundant. There has been a falling off in the past year or two in imports of cement into the Philippines. When made in the islands a saving of $1.60 per metric ton in duty will be saved.

A FOOLISH QUESTION.

Even in this day and age we hear the question asked, "Does advertising pay?" We hear this put in different ways, but generally it is: "Does advertising pay the retailer?"

There is also another class of people besides the retailers that have a question mark after this advertising business, and that is the people who do not consider that every man in the United States is a customer of theirs, for instance, the coal jobber, the lumber jobber and the hardware jobber, etc.

It does not seem as though the business man of today would ask the question "Does advertising pay?" although we do realize how many do ask it, and the cause is that they have gotten it into their heads that you cannot create a demand for anything; or rather, for the particular thing that they sell, by advertising. Take coal, for instance, and a large number of coal dealers are always telling you that there will be just so much coal used whether any of the dealers in town advertise or not, and that is possibly true, and more true of coal than any other one thing. But the trade of a town that has three, or four, or a dozen coal dealers in it, where not one of them advertise, is considered legitimate prey for the man who wants to establish a business. The up-to-date advertising business man of today when he is looking for a chance to go into business will drop quicker onto a live town with dead dealers than any other kind of a town. What I mean by dead dealers are dealers who don't advertise; dealers who are satisfied to take what comes to them and let it go at that.

Now I am going to take up again the idea that many have gotten settled in their minds that it is not possible to increase the sale of a staple article by advertising, and I have already mentioned coal. We will take coal up again. Your town has a gas plant and the gas men are advertising how neat and convenient gas is for cooking purposes. They are advertising to sell gas stoves very cheaply. Some gas companies either give the stoves away or put them in on lease to get the people to use gas.

And then there is the man who wants to sell gasoline or coal oil; he has got another way of heating when cooking, and he is advertising his proposition. If the coal man is sitting down and letting all these people get ahead of him, and asking if it pays to advertise, he is certainly asking a foolish question.

I have had a retail lumber dealer tell me that he did not believe in advertising for the reason that there were four lumber dealers in his town and as long as none of them advertise he would not. He took the position that it would only be an additional expense to each one, and that they would not sell a dollar's worth more of lumber. I rather envied the man being so self-satisfied, but I certainly thought he was behind the times.

With all the different things that can be used in the building of houses, and especially today, when every substitute for lumber is being advertised, it is certainly time the lumbermen got busy. This same rule holds good in any other article that is for sale by any kind of a retail dealer.

The man who studies most, and tries through every means that presents itself to keep himself posted, is the man who most realizes how little he knows. Whenever you see the man in any line of business who has the idea in his head that he knows the business thoroughly he is mistaken on one point. Instead of being filled with business lore, he is filled with egotism.

I dropped into a kitchen furniture place the other night and asked if they had anything to shirr eggs in, and the lady attendant who had already seen all of thirty-five severe winters, wanted to know if shirred and poached eggs were the same thing.

The new concrete sewer system of San Francisco, which has been in progress since 1908 under a $4,000,000 bond issue, is now nearing completion. The mains are entirely of reinforced concrete, lined with paving brick, and the system is a perfect example of modern drainage engineering. The largest main, 8 feet in diameter, runs from the county line via Mission street, San Bruno road, Eighth street, Sansome street, etc., to the Embarcadero, emptying at the foot of Grant avenue. An interesting feature is the overhead sewer of the Ocean View branch, a 3 by 4-foot conduit raised on tall concrete trestles to pass a low spot of ground. The entire system is built on pile foundations, enabling it to resist possible movements of the soil. President Adolph Judell of the board of public works recently took a party of friends through the main in a rowboat, starting at the outlet on the Embarcadero and going as far as Fourteenth and Harrison streets.

LIME

THE NATIONAL LIME MANUFACTURERS' ASSOCIATION.

(Meets Semi-Annually.)

Officers.

President—Wm. E. Carson, Riverton, Va.
First Vice-President—J. King McLanahan, Hollidaysburg, Pa.
Second Vice-President—Lowell M. Palmer, Jr., New York, N. Y.
Third Vice-President—Geo. E. Nicholson, Manistique, Mich.
Secretary—Fred K. Irvine, Chicago, Ill.
Treasurer—C. W. S. Cobb, St. Louis, Mo.

Executive Committee.

Wm. E. Carson, Chas. Warner, L. Hitchcock, W. M. Hunkins.

COAL GAS REDUCES PRODUCTION COST.

Milwaukee, Wis., Oct. 18.—Coal gas is beginning to displace wood in the lime manufacturing industry in Wisconsin. Not long ago the Standard Lime & Stone Company, which operates quarries and lime kilns at Valders and Knowles, Wis., adopted the Schmatolla patent in the construction of the first gas burning lime kiln ever erected in Wisconsin and the third to be constructed in the United States. The plant is now nearing completion at Knowles, where it is the object of curiosity and observation by those interested in the business in Wisconsin.

The main feature of the Schmatolla process is a gas producer made entirely of steel and the most refractory fire brick. The gas is generated from a low grade of soft coal and conducted unpurified to the kilns, which stand on either side of the producer.

By this process the company has reduced the cost of production from 16 cents a barrel over wood fire to 7 cents per barrel over the gas fire. In addition to this the output of the kiln has been increased from 175 to 325 barrels every twenty-four hours. At all times during the burning process the gas is held under perfect control and can be lowered to permit drawing and poking down.

"There was a time some years ago," said E. H. Lyons, president of the Standard Lime & Stone Company, "when the lime companies went into the northern woods and dictated to the choppers the price of their cord wood and the terms upon which they were to ship it. Competition, however, has changed these conditions, and now wood for lime companies must be bought from the ax, and the terms of shipment rest with the choppers and the railroad company. If you don't buy the wood from the ax now some other fellow will get it. Under the old wood-burning process it is necessary to have from ten to fifteen carloads of cut wood in storage and drying, while with the gas process it is only necessary to have one carload of coal ahead."

The base measurements of the producer at the Knowles plant are 10 by 22, while it is 15 feet in height. The walls are constructed of ⅜ steel plate. Two towering kilns rise at either side of the producer and are fed by it.

The National Mortar & Supply Company is rebuilding its entire plant at Gibsonburg, Pa., and will have by Thanksgiving one of the best lime producing plants in the country. It is now about two weeks behind in its shipments of hydrated lime. The company had a fine trade in agricultural lime this summer and its eastern business is first class. Its new plant will have a capacity of fully 150 tons a day.

The Wilson Rock Crusher & Building Material Company has been organized near Mortimer, N. C. The promoters of the company are J. W. Pope, F. H. McLaughlin and C. E. Crosby, all of Newton, N. C.

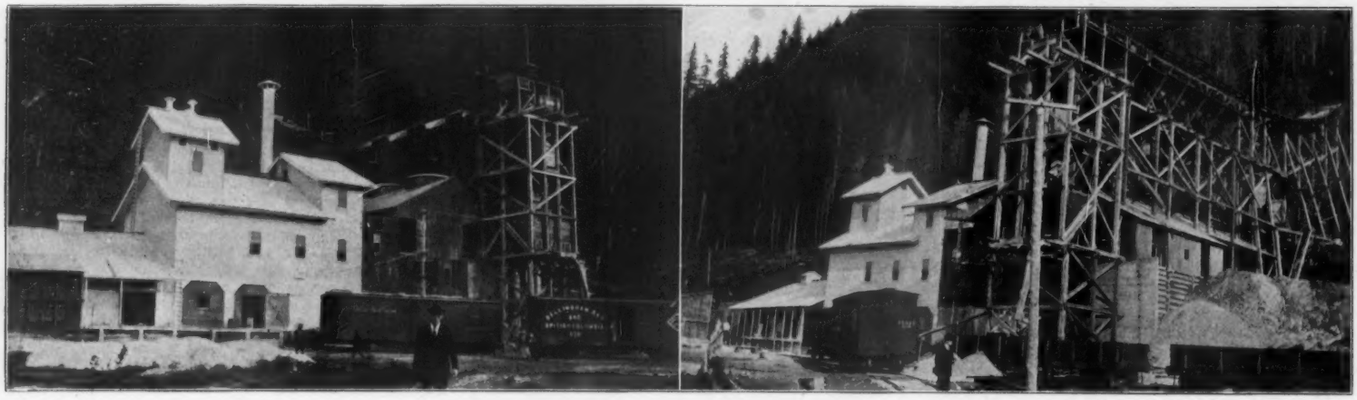
REVIVAL OF LIME BURNING PROMISED.

Quarryville, Pa., Oct. 18.—Although Pennsylvania leads in the production of lime in the United States, reports show that the industry experienced a material setback and that a considerable decrease in the production has taken place in this locality during the past few years. One of the most noticeable decreases in the production of this product in this state occurred in the vicinity of Quarryville. At one time this section was one of the principal lime markets of the commonwealth. The stone is of superior quality and before the age of commercial fertilizers farmers depended wholly upon it as a soil sweetener. The farmers of Fulton, Little Britian, the Drumores, and Colerian owned quarry lands and lime kilns in the vicinity of Quarryville, and in the winter they would go there, live in cabins, quarry limestone and burn lime, which in the spring was hauled to their fields and spread over the soil. In addition to the personal operators, lime burning was carried on extensively as an industry, and a large number of men were employed in the work. Many of these operators kept six-mule teams and delivered this lime as far south as Maryland. It was not an unusual sight to see one hundred wagons loaded with lime leave Quarryville in a day. Spreading the lime was not a pleasant task to the farmer, and as the building of railroads gave easy access to fertilizer factories, its use for a time was practically exterminated. The practice of liming the soil, however, in this state as in others, is being revived to an even greater extent than ever before, so that the demand is steadily on the increase, and is over-taxing the supply. A kiln is hardly given time to cool before its contents are hauled away. It would seem as if the industry in this district would be revived. With modern appliances for quarrying stone and the burning of it, a great business enterprise could be re-established in this line.

T. C. Andrews & Co., Norfolk, Va., is planning an addition to its lime plant, and is in the market for machinery for loading material to and from barges.

Shank & Etzler, of Woodsboro, Md., have purchased the lime works of Gilmer Schley, near Frederick, Md., and plan enlarging kilns.

The Concord Lime Works, Concord, Tenn., was destroyed by fire a few weeks ago. Besides the building, two boxcars and a quantity of lime were destroyed. The loss to the owner, Ben Jones, of Concord, is estimated at from $3,000 to $5,000, with no insurance. New buildings, 40x90 and 50x100, will be constructed at once.



PLANT OF THE INTERNATIONAL LIME CO., SUMAS, WASH.

Modern Hydrated Lime Plant in the State of Washington

By CORWIN D. SMITH

As in every other up-to-date industry, great strides have been made in the lime industry, and particularly towards the economic production of a high-grade uniform quality of hydrated lime, since it is generally conceded that this is the form in which lime will be put on the market almost exclusively in the future on account of its many advantages over the old form of "free" or "barreled" lime existing in the form of calcium oxide.

The particular advantages of hydrated lime will not be dealt with here, but it will suffice that after all is said and done, the hydrated form of lime is the only logical way of marketing the product, since it must exist as thoroughly hydrated lime before it has any value in general in the many ways in which it is employed.

The hydrating systems used have been many and varied, but withal each succeeding year seems to have brought about new and improved methods from the old form of slaking the lime in batches to the latest form of continuous hydration with the ultimate screening and air separating of the true hydrate from the "core."

Through the Eastern and middle Western states hydrated lime is well established, but it was up to the men behind the International Lime Company, whose plant I am about to describe, to really introduce a pure hydrated lime on the Pacific coast such as manufactured by the latest improved methods under strict chemical and technical control.

The company's holdings are just east of Sumas, Wash., on the Bellingham Bay and British Columbia Railroad in the well-known Kendall district.

To show the extent of the limestone deposit, it is 2,000 feet long, 1,500 feet wide, with an open working face at present of 125 feet. The prospect tunnel was run back 100 feet from the present quarry floor, going through solid rock. As the tunnel was being put in the rock it was examined regularly, both physically and chemically. It showed a remarkable absence of any intrusions of magnesia or silica. Below is a fair average of the several analyses:

Calcium carbonate	97.58%
Magnesia	.36%
Silica	1.32%
Iron and alumina	.50%
	99.76%

At present the rock is quarried by the open face method and is then transported to quarry bunkers on small cars. (Fig. 3.) From the bunkers the rock is let down through metallic chutes into the buckets of the aerial tram.

The tram was built by the A. Lesche & Sons Rope Company, of St. Louis, Mo. It is made of a lock coil cable 2,000 feet in length and has a vertical elevation of 1,100 feet. A series of five brakes located at the quarry terminal control its operation by gravity. The buckets are latest type, attaching and detaching themselves automatically at the two terminals. The discharge into the kilns is made by an automatic tripping device. The tram system has a capacity of 75 tons per hour.

The lime kilns are the continuous type and were designed and manufactured by the Mutual Engineering Company, of South San Francisco. There are three of these kilns in operation at present and have the following measurements respectively: Three-sixteenths-inch steel shell, 40 feet in height and 10 feet in diameter, with a capacity of 70 tons of limestone. The lower portion of the kiln tapers to a cooling cone having an 18-inch outlet which is controlled by a gear draw gate. Harbison-Walker Refractories Company's "Woodland" fire brick are used throughout and set in front of "Siocel." Each kiln has a capacity of about 125 barrels of lime per day, but at present certain changes are being made which, it is believed, will increase this output.

As for fuel, this company is especially fortunate in that an abundance of wood is available on its holdings. This wood has been found to give a uniform temperature and to produce a good soft-burned lime. The firing is done through four fire boxes with cast iron fronts.

After the dissociation temperature is reached the lime is drawn and dropped on a concrete floor and allowed to cool. These draws are made regularly every four hours.

After cooling, the lime is transported to a small Sturtevant crusher where it is reduced to about quarter-inch material. It is then elevated 43 feet by an enclosed steel elevator and distributed by screw conveyors to bins of 25 tons capacity each.

IN THIS THOROUGH AND CONCISE DESCRIPTION of the modern Western hydrated lime plant, Mr. Smith has confined his remarks principally to matters of construction, with which he is most intimately acquainted. Yet his statement "Hydrating systems used have been many and varied, but withal each succeeding year seems to have brought about new and improved methods from the old form of slaking the lime in batches to the latest form of continuous hydration, with the ultimate screening and air separation of the true hydrate from the 'core,'" is of special significance in that it is typical of the universal recognition with which lime in the hydrated form is being met.

The plant of the International Lime Company forms an interesting study because of the latest methods employed and the new and thoroughly efficient types of machinery installed—makes known from Coast to Coast and which compose, with others of their class, a distinct symbol of the present-day progressiveness which obtains in the lime manufacturing industry.

Mr. Smith, who has offices in Seattle, Wash., and who is one of the foremost chemical engineers, specializing in the design, construction and technical control of modern lime plants, supervised the construction of the plant herewith described, and has shown by the results obtained in this and other prominent lime burning enterprises his remarkable understanding of the subject of economical lime manufacturing.

The next step is to draw the lime through geared gates into the continuous hydrator. The hydrator is the Kritzer machine. This machine consists of six cylinders arranged in parallel directly over each other and is connected with a 40-foot stack water jacketed for 30 feet. Each cylinder is arranged with a screw which moves the material in the opposite direction to the flow of the gases. This feature is to be highly commended since it enables hydration to take place at a minimum temperature and the "burning" of lime so often experienced in the ordinary mortar box is done away with, and a hydrated lime of very high plasticity is the result. It might be said here that when dealing with a "high calcium" lime, it is doubly important that the hydration take place under conditions of minimum temperature and pressure.

The hydrated lime is next discharged into a screen conveyor 28 feet long, elevated 30 feet and discharged into a hexagon revolving screen. Here all the material of ⅛ inch or larger is rejected. The rejects consist of "core" (mostly underburned limestone). This makes the first stage of complete separation of the hydrated lime after the hydration stage.

The fine material passing through the hexagon screen is then lowered to a Raymond "scalper." This scalper, rotating at 2,700 r. p. m., throws the material up where it is caught by carefully regulated air currents, produced by a Raymond cyclone fan. This current draws it through an 18-inch pipe for 30 feet to a dust collector, and into the final storage bins before packing. This operation marks the final separation of the hydrated lime from the small particles of core, which are carried through from the hexagon screen above, the careful separation being due primarily to the difference in specific gravity of the true hydrated lime and the underburned particles. The hydrate has a specific gravity of 2.08 and the underburned particles (mostly calcium carbonate) has a specific gravity of 2.72.

The rejects from both the fan and the hexagon screen are collected in sacks and sold in different grades as "fertilizer" for raw land.

For sacking the hydrated lime, the Urschel-Bates valve bagging machine is used. The sacks hold just 100 pounds, and two sacks constitute a barrel.

Electric power is used throughout, the current coming from the main transmission line of the Whatcom County Railway, Light & Power Company's plant at Nooksack Falls. It is a three phase system, stepped down from 38,000 volts by two transformers to 440 volts. The motors are all General Electric type, with automatic governors. A total of 87½ horse power is consumed throughout the plant.

Just recently a complete rock crushing plant has been installed at the plant, with a purpose of crushing, grinding and screening the raw limestone which is to be used in the construction of roads and in concrete. The gravity system is also maintained throughout this feature of the plant.

Another addition has also been made recently to

the main plant—that of a "Broughton" mixer, for the purpose of thoroughly mixing with the hydrated lime a high aluminous slag known as "alca." This final product is known as "Alca lime," which is used extensively as a mortar and a plaster.

The company, being desirous of operating economically and having their products as near perfect as possible, have taken a precaution which every manufacturer can well afford if he would be abreast of the times in the modern idea of efficiency. All things of a technical nature, pertaining to quarry development, mill control and sales, are under the strict supervision of a chemical engineer. To aid in the work of quarry and mill control, and in the development of new fields for the marketing of the materials, a very complete chemical and physical laboratory is maintained.

The chemical and physical analyses of the hydrated lime are as follows:

Calcium hydroxide	97.30%
Calcium oxide	0.00%
Calcium carbonate	0.00%
Iron and alumina	1.10%
Silica	.60%
Per cent passing No. 200 screen	98.0%
Per cent passing No. 100 screen	100.00%

The plant was first proposed in June, 1909. One year was required for complete survey of the property. Construction began in July, 1910, and on May 25, 1911, the plant began operation and has continuously operated to capacity up to date.

The main features of this plant are as follows:

1. Extensive deposit of first-class raw material.
2. Economic operation.
3. Best of general management.
4. Strict technical control throughout.
5. Uniform quality of final product.

Jesse A. Frye, president; A. M. Lee, secretary-treasurer; J. J. Maney, vice-president; Stuart Mannell, general manager, and Corwin D. Smith, chemical engineer.

F. T. Crowe & Co., of Seattle, Tacoma, Portland and Spokane, are general sales agents for the company and supply the entire Northwest, with the exception of British Columbia, which is handled by Evans, Coleman & Evans, Ltd., of Vancouver and Victoria.

LOUISVILLE LIME NEWS.

Louisville, Ky., Oct. 20.—The quiet state of the building trades in Louisville is reflected pretty faithfully in the state of the lime trade, there being little doing among manufacturers and retailers, save in small lots for relatively insignificant jobs.

The R. B. Tyler Company is featuring the product of the Kentucky Portland Cement & Coal Company among its building materials, displaying sacks of the company's hydrated lime in its Fourth avenue windows. Hydrated lime is growing in use among local builders, and the company referred to is pushing this particular product actively.

The Howard Lime & Cement Company, of Chattanooga, Tenn., has been incorporated by W. A. Sadd, C. A. Lyerly, Porter Warner and others, for the purpose of handling the products referred to at Chattanooga.

San Francisco, Calif., Oct. 18.—In view of the fact that many lime manufacturers from various parts of the country will probably visit San Francisco during the exposition in 1915, the local manufacturers are taking considerable interest in the idea of having the summer convention of the National Lime Manufacturers' Association for 1915 held in this city. The time usually set for the summer convention would be a particularly favorable time to visit San Francisco and see the exposition, as the fair would then be at its best, and the cool bay breezes of this city would give a pleasing change from the seasonable heat of the East. That would also be the most opportune season to visit the various places of interest in the interior, such as Lake Tahoe, the Yosemite, etc., as well as to get a comprehensive view of the lime industry as carried on in California.

Production of lime in the United States, 1896-1912.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Short tons.			Short tons.	
1896		$6,327,000	1905	2,564,160	$10,941,600
1897		6,365,447	1906	3,156,667	13,465,093
1898		6,486,549	1907	3,092,534	13,686,776
1899		6,660,067	1908	2,764,373	11,691,133
1900		6,797,496	1909	3,054,974	13,566,072
1901		6,254,054	1910	3,355,764	14,685,639
1902		6,535,615	1911	3,208,915	13,699,664
1903		6,760,992	1912	3,529,402	15,070,114
1904	2,707,469	9,681,466			

C. F. Peterson and others, of Taylorville, Miss., are contemplating the establishment of a lime plant at that point.

UPPER TERMINAL, INTERNATIONAL LIME CO., SUMAS, WASH.

INCREASED VALUE OF SAND-LIME BRICK.

According to figures compiled by the United States Geological Survey the value of sand-lime brick in the United States, last year was $1,170,884, compared with $897,664 in 1911, an increase of $273,220. The 1912 production was slightly greater than that of 1910, which was valued at $1,169,153, and only 4.48 per cent less than that of 1907, a banner year.

The total number manufactured in 1912 was 174,361,000, of which 164,140,000 were common and 10,221,000 front brick. Michigan continued in 1912 to be the leading State in point of value of output, its product constituting 24.54 per cent of the total.

New York was second, as in 1911, reporting 10.99 per cent of the total. Florida was third, displacing Minnesota, which fell to fourth place. Eight States—California, Florida, Idaho, Indiana, Michigan, Minnesota, New York and Wisconsin—showed an increase in 1912, and three—New Jersey, Pennsylvania and South Dakota—showed a decrease.

Michigan showed the largest increase, $77,392; Florida the second and New York the third. In 1911 only two States—New York and Wisconsin—showed an increase.

The average price a thousand for common sand-lime brick was $6.45 in 1912, compared with $6.09 in 1911 and $6.36 in 1910, and for front brick, $10.41 in 1912, against $9.53 in 1911 and $10.90 in 1910.

FREE ADMISSION OF SILICA BRICK.

In accordance with the order of the Canadian Department of Customs, dated June 10, 1913, silica brick for use as a fire brick (9 by 4½ by 2¼ inches), valued at over $16 per thousand at place where laden for export to Canada, being of a class or kind not made in Canada, may be admitted free of duty, provided they contain over 90 per cent silica. It will be noticed that the price limit for silica brick is lower than for other fire brick admitted free of duty, which is $19.50 per thousand.

The city of Syracuse, N. Y., has found an extended use of sand-lime brick in that city in the construction of sewers and appertaining structures, such as manholes, catch-basins, etc. City Engineer Harry C. Allen states that the sand-lime brick have given entire satisfaction for several years. Chief Engineer Glen D. Holmes, of the Syracuse Intercepting Sewer Board, recently advised W. K. Squier, of the Paragon Plaster Company, and a prominent manufacturer of sand-lime brick that these brick have withstood the weather better than ordinary clay products stating that he is confident they are better for the purposes above mentioned.

The Sacramento Sandstone Brick Company, Sacramento, Calif., will furnish the brick to be used in the new twenty-story skyscraper, which will soon be erected in that progressive California city. C. C. Cuff is the architect and the building will be 100 by 90 feet, constructed of white granite and the face brick manufactured by the Sacramento company. The building when completed will have cost about $1,000,000. The sandstone facing brick manufactured by the Sacramento Sandstone Brick Company is an ideal material for the construction of schools, churches, libraries, residences, flat buildings, light courts, etc., and the company is finding a ready market for its product.

LOWER TERMINAL AND KILNS, INTERNATIONAL LIME CO., SUMAS, WASH.

CEMENT

ASSOCIATION OF AMERICAN PORTLAND CEMENT MANUFACTURERS.

(Meets Semi-Annually.)

Officers.

President—John B. Lober.
Vice-President—Robert S. Sinclair.
Treasurer—W. H. Harding.
Assistant Treasurer—W. D. Lober.
Secretary—Percy H. Wilson.
Assistant Secretary—Lewis R. Ferguson.

Executive Committee.

A. H. Craney, Jr., T. Henry Dumary, Edward M. Hagar, Richard Hardy, R. W. Kelley, R. W. Lesley, D. McCool, W. S. Mallory, John A. Miller, John R. Morron, L. T. Sunderland, Frank E. Tyler.

CEMENT MANUFACTURERS MEET.

Interesting Sessions Held at Detroit—Members Inspect Wayne County's Concrete Roads.

The Association of American Portland Cement Manufacturers, which met in Detroit, Mich., on September 22, 23, 24 and 25, at the Ponchartrain hotel, composed one of the most enthusiastic conventions of that important body. More than two hundred representatives were on hand, and a spirit of co-operation and hearty goodfellowship was in evidence both through the business sessions and on the various inspection trips of the famous concrete roads of Wayne county and other attractions of the City of Straits.

It was one of the most complete gatherings of cement manufacturers ever noted. The satisfactory condition of the cement market for the past year and the general trend of popular thought toward a more comprehensive and enlarged use of their products is in complete harmony with, and a direct result of the efforts of those who are exercising every function at their command to promote these very factors and influences.

The position of the cement industry today is readily traceable to this concerted effort at co-operation. The Association of American Portland Cement Manufacturers has through its publicity bureau, under the direction of Secretary Percy H. Wilson, done much to distribute information as to the uses to which cement can be put, chief among which is the concrete road, bound to be the economical, logical and popular highway of the future.

After the formal gathering of the members at the opening session on Monday, September 22, the delegates were taken over Woodward avenue, Van Dyke and Grand boulevards in automobiles, which were furnished in abundance, where they inspected many miles of concrete roads. John B. Lober, president of the association, voiced his enthusiasm of the Detroit roads, saying: "We certainly appreciate the value of the Wayne county concrete roads. I feel that we of the cement world can point with pride to the work carried out here by your road commissioners, Messrs. Hines, Haggerty and Butler. We willingly spend money to send doubters here to view these roads because we realize their true worth."

Committee meetings on laboratory and technical research, uniform cost sheets, legislation, statistics, etc., kept the delegates busy Tuesday morning, September 23, the second day of the convention, the main body of the association afterwards convening until the following day. An executive session was held in the evening.

A business session was held at 10 o'clock Wednesday morning, at which the entire organization was present. Several committees were appointed, one of which was to designate the next place of meeting. An informal discussion was carried on by the members. B. F. Affleck, general manager of the Universal Portland Cement Co., in speaking of the concrete roads of Wayne county, said: "Wayne county leads the country, so far as concrete highways are concerned. From every point in the United States where the building of highways is considered we receive requests for information and data concerning these roads. Wayne county is the only place where concrete highways have been down for any long period of time, therefore their value is doubly apparent when data is being given."

Thursday, the last day of the meeting, was given over to further inspection of the county's concrete roads. A banquet was held in the evening, where an exchange of opinions took place, completing a fitting wind-up of most valuable information which the members had obtained during their attendance at the convention.

A large majority of the delegates remained in the city to be present at the mammoth road congress held under the auspices of the American Highway Association, and which was to begin on the following Monday, September 29, continuing throughout the entire week. A full report of that convention is contained in this number of ROCK PRODUCTS.

Total production of cement in the United States in 1910, 1911, and 1912, by classes.

Class.	1910		1911		1912	
	Quantity (barrels).	Value.	Quantity (barrels).	Value.	Quantity (barrels).	Value.
Portland	76,549,951	$68,205,800	78,528,637	$66,248,817	82,438,096	$67,016,928
Natural	1,139,239	483,006	926,091	378,533	[a] 821,231	367,222
Puzzolan	95,951	63,286	93,230	77,786	[a] 91,864	77,363
Total	77,785,141	68,752,092	79,547,958	66,705,136	83,351,191	67,461,513

[a] Shipments.

BELGIAN CEMENT UNION.

An agreement has been reached, states The Times (London) between almost all Belgian artificial cement works for the renewal of the so-called "Syndicat des Ciments Artificiels," which controls the home sale of artificial cement. Among the 17 Belgian firms which have agreed to renew this combination are the Société de Bonne Espérance at Turnhout, the Société de Niel on Rupel, and the cement works of Cronfestu, Obourg, Harmignies (near Mons). The above syndicate has renewed, at the same time, the agreement with the German cement manufacturers for the sale of artificial cement in the Netherlands by the Nederlansch Syndicaat, which has to meet the keen competition of the Belgian works manufacturing natural cement in the Tournaisis district.

The Beaver Portland Cement Company, which was recently incorporated at Portland, Ore., for $600,000, will erect a cement plant at a cost of $450,000 at Gold Hill, Ore. The plant will have a daily capacity of 1,000 barrels of cement, to be operative in 10 months.

Chas. Catlett resigned the position of treasurer of the Security Cement and Lime Co., Hagerstown, Md., on the tenth inst., A. M. Tyree having been elected to succeed him in that office. Mr. Tyree resigns as auditor of the company, succeeded by E. K. Miller.

The assets of the Seaboard Portland Cement Company in Philadelphia have been placed in the hands of William F. Allen as ancillary receiver by order of Judge Thompson in the United States district court on October 10. The court's order was made on the affidavit of the Fidelity Trust Company, of New York, a creditor, filed by attorney John Blakely. Security was fixed at $500. Mr. Allen was appointed permanent receiver of the concern in New York, in April, 1911. At that time the company had an authorized capital stock of $5,000,000, which was fully subscribed.

Substantial progress is being made on the new plant of the Universal Portland Cement Company at New Duluth, Minn. Frost conditions at New Duluth require foundations at least 9 feet deep involving very large quantities of material. Concrete is being mixed in a central mixing plant and hauled to the points where work is in progress, in two car trains each car holding five one-yard buckets. The buckets are picked up by a locomotive crane and dumped into the forms. One hundred and thirty men are now at work on the plant and this number will be increased as soon as the structures are started. The stock room and machine shop are to be completed first and will be used to house the materials and equipment required for the building of other parts of the plant. Their foundations are complete and the walls are about to be started. The operation is in charge of the following officials of the Universal Portland Cement Company: Leonard Wesson, assistant to president; A. G. Carlson, mechanical engineer, and J. H. Barbazette, superintendent in charge of construction. This plant will have a capacity of 1,400,000 barrels of cement per year, giving a total output of 13,400,000 barrels.

Shipments of Portland cement in the United States in 1912, by States.

State.	Shipping plants.	Quantity (barrels).	Value	Average price per barrel
Pennsylvania	26	27,539,076	$18,918,165	$0.687
Indiana	5	9,634,582	7,237,591	.751
California	8	6,093,790	8,215,894	1.348
Missouri	5	4,614,547	3,700,776	802
Illinois	5	4,602,617	3,444,085	748
New York	7	4,543,060	3,448,735	759
New Jersey	3	4,490,645	3,052,098	680
Michigan	10	3,651,094	3,145,001	861
Kansas	12	3,592,148	2,815,113	784
Iowa	3	3,190,354	2,790,396	875
Washington	3	1,438,137	2,012,785	1.399
Ohio	5	1,382,923	1,166,589	.844
Utah	3	760,668	937,119	1.232
Texas	4	2,952,592	3,088,058	1.045
Oklahoma	2			
Tennessee	2			
West Virginia	1	2,471,233	1,729,419	6998
Kentucky	1			
Virginia	2	1,916,218	1,420,639	741
Maryland	2			
Colorado	2	1,103,279	1,109,889	1.006
Montana	1			
Alabama	2	1,035,593	877,448	847
Georgia	2			
Total	116	85,012,556	69,109,800	813

LOUISVILLE CEMENT NEWS.

Kentucky's First Concrete Road Watched With Interest—Drought Causes Some Suspension of Activities.

Louisville, Ky., Oct. 18.—While there are few large jobs in sight, the activity of the concrete contractors on small jobs all over the country has given the cement manufacturers a very respectable outlet for their product, and the volume of business done will compare very favorably with that of any other period when large work was not on hand.

The cement contract on the Beargrass creek work in Louisville has not yet been let by J. H. Cahill, who will handle the work, and cement manufacturers are wondering who the lucky one will be. This will be one of the largest contracts of the season, and there is much competition on it.

J. B. Speed & Co. are furnishing the cement on the first piece of concrete roadway laid in Kentucky. This is a strip of 1,500 feet, from Market street to Shawnee Park, in the west end of Louisville. The road is being laid on a flat bed, the crown being obtained by making the course of concrete seven inches thick in the center and five inches at the sides. Concrete curbs are also used. The roadway is reinforced with woven No. 9 wire fencing, placed two inches below the surface. The experiment will be watched with considerable interest by road engineers in the state, and if it is successful many miles of this kind of highway will probably be constructed.

The cement for part of the work on the Government canal at Louisville, amounting to about 500 barrels, was furnished by J. B. Speed & Co. The greater part of the cement needed on this job, which is being handled by the Ohio River Contract Company, and on the dam at Henderson, Ky., where the same company is doing the work, is being delivered by the Lehigh Portland Cement Company, of Mitchell, Ind. The cement on these two big jobs amounts to about 65,000 barrels.

C. M. Timmons, sales manager of the Kosmos Portland Cement Company, was in Cincinnati recently, rounding up prospects for several large contracts which are in sight in that section. The additions to the Kosmos plant are going along nicely, and should be completed by the first of the year. The extreme drouth caused a suspension of activities at the plant for a few days recently, water for operations being hard to get. This caused no difficulties of any kind with contractors, however, as reserve stocks were ample to keep up deliveries.

The Board of Public Works of Paducah, Ky., has decided that hereafter all cement used by the city must be tested by a laboratory to be selected by City Engineer L. A. Washington. The city engineer informed the board that cement could be tested for about three cents a barrel, and the board considered it worth the money to avoid using inferior material, as the city has heretofore had considerable trouble in securing good cement for sidewalks and other purposes.

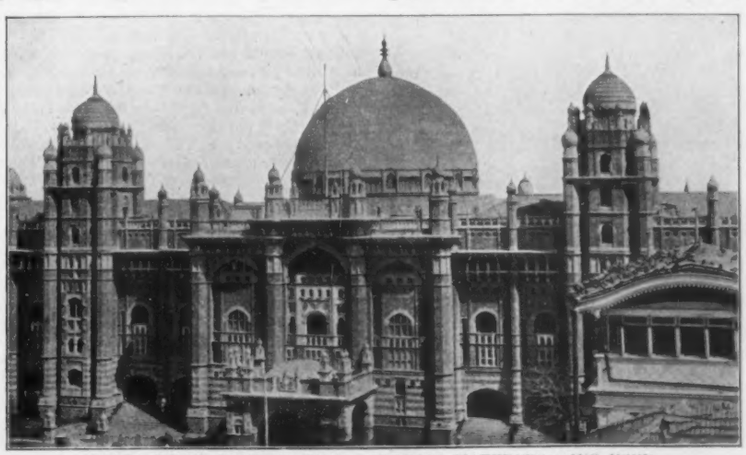
The directors of the Monarch Cement Company at Humboldt, Kans., have elected H. F. G. Wulf, president; F. Kreitzer, vice president; A. H. Nooseman, secretary, and F. H. Rhodes, treasurer. The officers will move to Humboldt at once and take active charge of the business. The plant began operation a few days ago.

General Manager Tiler Henshaw, of the Riverside Portland Cement Company, San Francisco, Cal., announces plans for the enlargement of the plant at Crestmore in the near future. After experimenting with 30 different systems for the last four years, it is announced that the Riverside Portland Cement Company's Crestmore plant has at last solved the problem of preventing the escape of dust from its stacks, having a device now in successful operation. The device is operated by electricity, and ten treaters have been installed, one for each stack, at a total cost of about $300,000. The value of the products saved, it is said, will just about cover the cost of operation.

The plant of the Wolverine Portland Cement Company at Quincy, Mich., has been temporarily shut down, during which time repairs will be made.

The cement plant of R. B. Tyler, Tucker's Station, Ky., was destroyed by fire September 19, entailing a loss of $50,000.

John G. Evans, of the sales force of the Lehigh Portland Cement Co., is known to fame as an artist in cement work, as an artistic teller of droll stories, and now he springs upon us another branch of art by composing the Lehigh Triumphal March, to be played by the band at the coming cement show at Chicago, and other places of popular resort. We saw John Philip Sousa on the train the other day and just recall that he was not as gay as usual since he has a rival, in the person of a gentleman attached to the cement industry.



POST OFFICE, BOMBAY, INDIA; CERESIT WATERPROOFING USED.

CEMENT IN THE PHILIPPINES.

[Consul General George E. Anderson, Hongkong, British China.]

The manufacture of cement in the Philippines, whose supply now comes almost entirely from Hongkong, will probably be commenced toward the end of 1913. The Rizal Cement Co., the Philippine corporation whose formation was announced in Daily Consular and Trade Reports for February 13, 1912, and which has acquired large property and limestone and silica deposits in Binangonan, Rizal Province, about 30 miles from Manila, is commencing the erection of its large factory. A complete outfit of machinery has been ordered from Madgeburg, Germany, for a plant guaranteed to produce 1,000 barrels of cement per day. The company also has ordered machinery for a complete plant for manufacturing its own barrels and casks. The entire plant will be located on the shore of Lake Laguna near the source of the Pasig River, and the company will have transportation by launch and barge for its product from the factory to Manila and the seaboard. Samples of materials for cement submitted to American and other experts promise a high-grade product.

There has been a falling off in imports of cement in the Philippines in the past year or so. Total imports for the fiscal year 1912 are valued at only $539,749, as compared with $598,666 the year before. The exports to the islands from Hongkong form nearly two-thirds of the whole, the value of shipments from Hongkong in the fiscal year ended June 30, 1912, being $239,194, as compared with $340,616 in 1911 and $265,638 in 1910. The value of the shipments from Hongkong to the islands during the fiscal year ended June 30, 1913, was only $290,984. Exports during the first quarter of the current year were worth $61,936. The manufacturers of cement in Hongkong have been greatly embarrassed during the past year by the difficulty of securing supplies of limestone from the sole deposits in this part of southern Asia, which are within Chinese territory and under control of the Chinese Government. The exports of cement from Indo-China to the Philippines have remained about the same for several years—about $118,000 worth—constituting something over a fifth of the whole.

The manufacture of cement in the Philippines will not only save ocean freights but a duty of $1.60 per metric ton on non-American cement.

MARKET FOR CEMENT IN MADRAS.

(Consul José de Olivares, Madras, India.)

Extensive construction work in progress in various parts of the Madras Presidency has resulted in an unprecedented demand for Portland cement. Among the enterprises in which cement is being largely used is the viaduct between Mandapam on the southeast coast of India and Pamban on the island of Rameswaram, which is rapidly nearing completion. The Scherzer rolling lift bridge, of 200 feet span, which constitutes a part of the viaduct, is shortly to be erected, under the supervision of a representative of the American firm that supplied the latter structure.

It is reported that the recent completion by the South Indian Railway of an exhaustive survey of Adams Reef, between the island of Rameswaram and Ceylon, has demonstrated the practicability of constructing a causeway to link up India and Ceylon at a cost which renders the project feasible. In the event that this work is undertaken the future demand for cement in this consular district will be enormous.

Improvements now being made in the harbor works at Madras are resulting in the annual employment of 1,600 tons of Portland cement, which rate of consumption will be uniform for the next four years. The demand for cement is further increased by the water and drainage schemes of the Madras Corporation and by the general building activities in evidence throughout the Presidency.

SOURCE OF CEMENT SUPPLIES.

The greater part of the cement used in southern India is imported from the United Kingdom and at present practically none is supplied by the United States.

CERESIT IN A FOREIGN COUNTRY.

The extension of the business of the Ceresit Waterproofing Company, of Chicago, to foreign countries, wherein the use of their product "Ceresit" becomes a part of the public buildings in foreign lands, shows its value in an international commercial sense. The new post office building at Bombay, India, shown in the accompanying illustration, is one of the most recent examples of the international scope of the business of the Ceresit company. The waterproofing of this building has been declared absolutely perfect and entirely consistent with the climatic conditions of the city in which it is situated.

NEW BRITISH CEMENT INSTALLATIONS.

(From our London Correspondent.)

As the result of several years' study of continental practice in actual works by Eustace Mason, a particularly interesting and modern plant for the manufacture of Portland cement is being established at Claydon, near Ipswich, England. The slurry is mixed at a quarry about half a mile from the works, where suitable chalk and clay are obtained, and it is delivered through a pipe line by a three-throw geared pump. Overhead bare copper conductors carry electricity to the quarry where a 50 horsepower motor drives the pumps and a wash mill supplied. The chalk and clay are dug out by hand and taken to the wash mill in tubs running on a narrow gauge railway. On arrival at the works the slurry is discharged into a tube mill whence it falls into three brick storage tanks, where air is blown through it by special nozzles to insure a perfect mechanical mixture. Up to this point the mixture is purposely kept slightly low in chalk so that after testing the requisite amount can be added from a tank of chalk and water mounted over the storage tanks; thus giving the exact proportion needed. The slurry can be drawn off from either tank to a chain pump, which raises it into a feeding tank over the kiln. Here again compressed air is used to keep the mixture constant. The revolving kiln measures 134 feet in length and six and one-half feet in diameter, with an enlargement to seven feet ten inches at the burning zone. It is driven by a 25-horsepower motor and fired with coal dust.

On leaving the kiln the clinker is elevated and discharged into tipping trucks which run along a gantry under the roof of a cooling store, and empty their contents where required. From this store the clinker is shoveled into another elevator, which raises it into a hopper over the grinding mill. The grinding is done by a ball mill and tube mill combined in one machine which takes 150 horsepower to drive, and is started and stopped by a friction clutch.

Dust is extracted by an exhaust fan and canvas filter. The finished cement is delivered by a worm conveyor to the store, where it is placed in bags and taken to railway trucks, on a private siding which runs across the front end of the store.

Coal is shoveled from trucks on the siding into a motor-driven elevator, which delivers to a worm conveyor mounted on brackets across the front of the power house. This conveyor delivers to a bin over each of two "overtype" engines and to a drier for the coal supply to the kiln. This drier consists of a revolving steel cylinder measuring some two and one-half feet in diameter by 28 feet long and mounted, with its axis inclined, upon friction rollers, the drive being through spur gear by a 15-horsepower motor. The coal gradually travels through the cylinder which is surrounded by hot gases from a furnace at one side. A special feature is the abstraction of the dust by an exhaust fan and its delivery into the furnace to be consumed. From the drier the coal is raised by an elevator into a hopper over a second combined ball and tube mill, where it is ground into powder and again elevated into a large storage hopper over the injection fan for the kiln. This mill is smaller than the cement mill, and only takes 50 horsepower.

Motive power is provided by two semi-stationary superheated steam engines, each capable of developing 255 b. h. p. continuously, and 300 b. h. p. as an overload. Each engine is compound and fitted with a jet condenser and an air pump driven off the crankshaft. The working pressure is 190 pounds per square inch and the steam is superheated, but never to a total temperature exceeding 600° Fahr. Each superheater is placed in a pit below the end of its boiler and a door is provided in the downtake to allow of cleaning the tubes or getting at the tube-plate joint, which has to be broken when the furnace and tubes are withdrawn, a special feature of this type.

The condensing water flows to a common sump, whence it is pumped by one or two motor-driven centrifugal pumps to a cooling tower constructed of wooden troughs. A 5-ton hand power traveling crane is erected over the engine. The feed-water arrangements include a pump driven off the crankshaft, an internal heater, and a softener. Judging by the behavior of these engines on test without any lagging there is little doubt that a coal consumption of one and one-quarter pound per b. h. p. or less will be realized in actual practice.

Both engines drive one main shaft through friction clutches, so that either can be laid off when desired. This countershaft drives both the cement and the coal grinding mills by belts passing through the wall, while a pulley on the cement mill drives a line shaft for the mill elevators, conveyors and fans. In the power house, and also driven off the main shaft, is a horizontal air compressor and a dynamo of 200 k. w. at 300 volts. The form of lighting to be adopted has not yet been decided upon, but in any case the voltage will be reduced by a motor generator. The main switch board carries the usual instruments for the generator and motor circuits mounted upon enameled slate panels.

An ample supply of water is raised from a borehole 200 feet deep in which the water rises to within 25 feet of the surface. A three-throw motor-driven pump is fixed in a well at the top of the borehole and is capable of supplying 2,000 gallons an hour. Part of the supply is carried by a pipe line to the quarry for the wash mill.

WANTS CEMENT-MAKING MACHINERY.

A report from an American consular officer states that a resident of his district is about to establish a plant for the manufacture of Portland cement and would like to hear from American firms able to equip the same. The yearly output of the factory will amount to approximately 100,000 tons of Portland cement, with a possible increase in the future. The material out of which the cement is to be made is limestone and clay, averaging about $30 for a quantity required to produce 160 tons of cement. Coal will be used for fuel, costing about $7 per ton. The machinery must be of the best type and working at the lowest cost. The inquirer is anxious to place the order for equipment and installation in the United States and would like to hear from firms willing to supply the same.

Address No. 11583, Bureau of Foreign and Domestic Commerce, Washington, D. C.

ATLAS ELECTRIFIES PLANT.

The Atlas Portland Cement Company's plant at Ilasco, Mo., began recently to take power from the Mississippi River Power Company, this being the power generated at the Keokuk (Iowa) dam. Several machines have been started and everything is running very satisfactorily. The machinery for the balance of the installation is arriving daily and other portions of the plant will be changed over to the electric driver as rapidly as the machines can be installed, all necessary foundations and connections being ready. In a very short time the plant will be operating entirely by electric power. The largest single users of the current from the big power dam, the Atlas, has an important relation to the great enterprise at Keokuk. Approximately 10,000 horsepower will be turned into the mighty machines of the cement plant when the installation is completed.

As stated in the September ROCK PRODUCTS, the property of the Northampton Portland Cement Company, consisting of the plant at Stockertown, Pa., with adjoining lands, tools, machinery, patents, franchises, etc., was offered for sale by the Equitable Trust Company, of New York, trustee for the bondholders. The property was purchased for $200,000 by a committee of the first mortgage bondholders, represented by Graves & Miles, attorneys, of No. 11 Broadway, New York City. L. P. Meyers was auctioneer.

The Universal Portland Cement Company at its plant at Universal, Allegheny county, Pa., five miles from East Pittsburgh, Pa., on the Bessemer & Lake Erie Railroad, is carrying on one of the really immense operations of this district. It has 45 acres and employs about 1,000 men. The company is increasing its present capacity and will soon be turning out a largely increased amount. About three-fifths of its product is raw material and two-fifths slag from its furnaces. It grinds and burns the limestone at its own plant. Its kilns are 120 feet long and 10 feet wide, and it owns a limestone quarry in the New Castle district. The company has ten miles of side-track and can accommodate 400 cars in its yards.

Pittsburgh, Pa., Oct. 20.—Business in cement has been exceptionally good all summer. Even now there is a splendid market for cement, although prices are being cut some. Eastern or Lehigh cement can get in here on a freight rate to get away with some of the best orders that are being placed. The cement firms in the New Castle district are doing well, although they are not shipping a large amount to Pittsburgh. Ohio trade is brisk. Concrete jobs of importance are many in number and the weather is such that they are going ahead in splendid fashion. Just now there is a dearth of big concrete work coming up for bids. Engineers and reinforced concrete firms say that prospective work is hesitating a little before coming on the boards for bids or before contracts are awarded.

INTERESTING TEST OF AMERICAN PRODUCT BY GERMAN LABORATORY.

Late in 1912 the "Deutsche Kahneisen Gesellschaft" at Berlin, Germany, purchased without the knowledge of The Trus-Con Laboratories some Trus-Con Waterproofing Paste, Concentrated. They submitted samples of this paste under the name of "Kanolite" to the Royal Testing Laboratories at Berlin, Germany, for a thorough test.

The use of integral waterproofing has advanced to a far greater degree in Germany than it has in this country, and the "Deutsche Kahneisen Gesellschaft" fully realized that they must have a waterproofing that would not only equal but surpass in efficiency any German material.

The report of the Royal Testing Laboratories was so satisfactory to the "Deutsche Kahneisen Gesellschaft" that they have secured from The Trus-Con Laboratories the right to manufacture Trus-Con Waterproofing Paste, Concentrated, in Germany and have given it the name of "Wassertrotz."

The waterproofing submitted to the Royal Testing Laboratories as "Kanolite," now marketed in Germany as "Wassertrotz," and "Trus-Con Waterproofing Paste, Concentrated," are the one and same material made from formulas devised by the chemical engineers of The Trus-Con Laboratories.

Germany leads the world—or is commonly supposed to lead the world—in technical and chemical engineering, but a German company comes to America to secure the formulas to successfully manufacture a product that will stand the severe tests of the greatest German laboratory.

Trus-Con Waterproofing Paste, Concentrated, has not only stood every laboratory test it has been submitted to, but it has stood the hardest of practical service test and the service tests are the best proof of its great efficiency. It stands today a triumph of American science and engineering skill.

The Trus-Con Laboratories have reprinted the report of the test made by the Royal Testing Laboratories with an English translation. A copy will be mailed by them to any interested party. Write to The Trus-Con Laboratories, Trus-Con Building, Detroit, Michigan, if you wish a copy of the complete report.

CEMENT TRADE IN ASIATIC TURKEY.

(Vice Consul General John W. Dye, Smyrna.)

There is an increasing demand for Portland cement in the Smyrna consular district. At present the consumption is estimated at 6,000 to 8,000 metric tons of 2,204.6 pounds per year, and all is imported. Most of it comes from France, Belgium, Germany, Greece, and Constantinople.

Portland cement arrives in barrels weighing 80 and 160 kilos (176 and 352 pounds) and in sacks of 50 kilos (110 pounds). On account of the different grades the prices vary from 35 to 55 francs ($6.76 to $10.62) per metric ton c. i. f. Smyrna. Terms of payment are usually three months' time or 3 per cent discount for cash. Most of the importations are direct by dealers, the rest by commission houses.

It is a question whether the ordinary grades of Portland cement could be imported from the United States in competition with Belgian and French cements on account of the heavier freight charges. There is now a direct line of steamers from Philadelphia and New York to Smyrna, the American Levant Line, by which American cement might be shipped. The names of Smyrna importers of cement are forwarded (and may be had from the Bureau of Foreign and Domestic Commerce, Washington, D. C.).

Members of the board of directors of the Northwestern States Cement Company and of the Southwestern States Cement Company met last month and planned extensive improvements of plants located in Mason City, Iowa, and Dallas, Tex. Among the officers there were T. H. Dinsmore, Brooklyn, N. Y.; C. J. Jones, Lincoln, Neb.; F. G. Ray, Vinton, Iowa; M. G. Gunderson, Kenyon, Minn.; H. R. Breck, Dallas; W. E. Frudden, Dubuque; C. B. Ayers, Chicago; A. C. Scanlon, Minneapolis; C. H. McNider, Mason City, is president of both companies.

Walter A. Fuchs, advertising manager of the Lehigh Portland Cement Company, of Allentown, Pa., has been spending several weeks in the Western sales office at Chicago. Mr. Fuchs is decidedly an enthusiast on the subject of concrete roads. "Cement manufacturers find more truth about Wayne county (Mich.) and other roads by observing the readiness with which the concrete road is adopted by practical and scientific road builders than by observing statements labeled 'truth,' emanating from manufacturers of other road building materials," said Mr. Fuchs. We agree, very heartily.

CONCRETE

AMERICAN CONCRETE INSTITUTE.
(Meets Annually.)

Officers.

President—Richard L. Humphrey, Philadelphia, Pa.

Vice-President for two years—Arthur N. Talbot, Urbana, Ill.

Vice-President for one year—L. C. Wason, Boston, Mass.

Treasurer—H. C. Turner, New York, N. Y.

Secretary—Edw. E. Krauss, Philadelphia, Pa.

EARLY INTEREST MANIFESTED IN MID-WEST CEMENT SHOW

Nebraska Cement Users' Association Preparing for Annual Exposition and Convention.

Preliminary publicity work for the Eighth Annual Mid-West Cement Show and the Ninth Annual Convention of the Nebraska Cement Users' Association, both to be held during the first week in February, 1914, in Omaha, Neb., has brought to the officers of the organization an unusual evidence of early interest.

This interest is the result of constant work throughout the entire year by the association members for the making of the convention and exposition of more extensive value to the industry. The success of the Mid-West Cement Show is already assured. Secretary Whipperman's recent announcement to the trade containing information relative to the allotments of the space and details of the arrangements, brought responses from exhibitors in even greater numbers than had been expected. One of the important changes in the arrangements for handling exhibits, as referred to by the secretary, provides for the handling of signs, chairs, tables, railings, partitions, watchmen and janitor service by the management of the exposition without expense to exhibitors.

The Omaha Commercial Club is rendering every assistance possible for the making of the show a record-breaker. Every new feature available from this source will be added. It is also in evidence that many new features are made possible by the success of and the experience gained by previous expositions.

The remarkably successful year in concrete and cement interests throughout the West during the past year is one of many factors bearing on the early interest manifested. There has been a decided and consistent increase in the use of cement throughout the section known as the middle West and the officers of the Nebraska Cement Users' Association point with pride to the fact that the association has on many occasions been of service in promoting more extensive use of the product.

The Mid-West Show will be the only cement exposition to be held outside of Chicago during the year of 1914, and the dates are so arranged as to make it possible for the exhibitors at Omaha to transport their exhibition materials to Chicago in ample time for the Chicago show.

The object of the Nebraska Cement Users' Association in conducting an exposition is surely sufficient to cause a far-reaching human interest. Quoting from the Constitution, Sec. 1, Art. 2, of the Association, "Object: The object of this association shall be the promotion of a better knowledge of the proper use of cement; to advance its use as a building material, and to bring into closer relation every person interested in this cause. The object shall be attained by means of papers, discussions and other exchanges of views through exhibits of machinery and material at conventions to be held for this purpose."

Therein lies the basic principles of the association and for the holding of the Mid-West Cement Show. The carefully prepared plans of President Peter Palmer and Secretary Frank Whipperman are worthy of the early interest which has been manifested.

The allotments of space were made at the office of the secretary on October 20. All applications received were handled with the best possible care and consideration. The exhibitors will surely receive an efficient service through the endeavors of the officers of the Nebraska association.

MEMPHIS CONCRETE NEWS.

Memphis, Tenn., Oct. 18.—The building supply interests of Memphis were represented to some extent in the exhibits of the Tri-State Fair, and what they had on the grounds came in for a good share of attention. The Great White Way went on downtown and many visiting dealers were in the city.

The Tri-State Builders' Supply Company, one of the more recent entrees here, had an exhibit booth erected outside the Fine Arts building. Atlas cement, Lehigh, Kosmos and Portland goods, together with Atlas concrete mixers, pictures of Panama work, porch columns and cement brick were exhibited here.

The Memphis Granolith Company, who make burial vaults of cement, had an exhibit of this character in a large space in one of the buildings, also samples of their porch column and step work.

The Fischer Lime & Cement Company were represented, too, on the Tri-State Fair grounds. This firm is finishing contracts on some big work, but finds smaller work a little less this season.

FRANK WHIPPERMAN, SECRETARY, NEBRASKA CEMENT USERS' ASSOCIATION, OMAHA, NEB.

The Improved Brick & Stone Company (Inc.), of Byhalia, Miss., whose local representative is J. H. Etter, 961 South Wellington street, had an exhibit of Sanderson chemical process brick in red and gray. W. L. Sanderson, president and manager, was on hand all the week.

Mr. Moss of the Lehigh office, in Memphis Trust building, reports that autumn trade is slightly more active than four weeks ago.

The fifteen-story addition to the Bank of Commerce and Trust building is about completed, so far as exterior is concerned. Baltimore contractors started the work over a year ago. This will give building a very wide frontage on Main street.

The Clements Construction Company has received the contract and is putting down 50,000 feet of cement sidewalks at McKenzie, Tenn.

The Jas. Alexander Construction Company is getting along well with the building of the eight story Illinois Central Passenger depot here. Much cement and brick work figures in this job.

The Kansas City firm doing the foundation work for the Rock Island bridge across the Mississippi river is working away and is making some progress. A caisson system will be used.

J. G. Galbraith & Son, Ambler, Pa., leading cement pavers and contractors, are very busy and expect to be awarded contracts for several very large sections of sidewalk at new building operations near there. This concern does only high-class work, and has executed some excellent ornamental work in connection with a number of the costly homes of the wealthy Philadelphians residing there.

PHILADELPHIA CONCRETE NEWS

Many Structures of Mammoth Size to be Erected—Concrete Paving in Progress.

Ballinger & Perrott, Philadelphia, are preparing plans and specifications for a reinforced concrete warehouse to be built this fall at 719 Sansom street for Henry A. Dreer. The new structure will be six stories in height, 20 by 75 feet, and will have outside walls of brick and stone. All skeleton construction will be of reinforced concrete, as will floors, walls and stairway.

The Hassam Paving Co., Worcester, Mass., has been awarded the contract for the construction of the Southern boulevard, Philadelphia, at $185,000, and is now assembling the plant, which will be one of the largest and most complete ever used in street or road construction in Philadelphia. Work will be started immediately and will be continued throughout the entire winter. The company already has on the ground two steam locomotives, twenty concrete cars, the same number of dirt cars, a steam shovel, two concrete mixers and concrete handling plant, 250 tons of steel rails and 5,000 railroad ties, with considerable more equipment to be delivered. Concrete will be the principal material used in this work, and upwards of 50,000 barrels of cement have been contracted for.

John G. Brown, Witherspoon building, Philadelphia, is architect and engineer for the new buildings of the International Cork Co., and which will be built at once at Brooklyn, N. Y. These buildings will consist of a manufacturing building 90 by 240 feet, and a cork grinding building 25 by 40 feet, each one story in height, and of reinforced concrete construction. Contracts will be awarded this month, and it is expected that the buildings will be ready for occupancy shortly after the first of the year.

Irwin & Leighton, Philadelphia, have broken ground and are now assembling the plant for what will be one of the largest reinforced concrete buildings yet erected in Philadelphia. This will be the new building and factory for the Ford Motor Co., of Detroit. The structure will be at Broad street and Lehigh avenue, and will cost about $750,000. It will be ten stories in height, and will cover a ground plan 231 by 312 feet. The columns, floors and roof will be of reinforced concrete, with exterior walls of stone and brick. The building was designed by Albert Kahn, of Detroit. Work will be continued throughout the winter, as it is planned to assemble cars therein early in the spring.

The Concrete Construction Company, Philadelphia, has been awarded the contract for an eight-story reinforced concrete apartment building at Walnut and Fortieth streets, Philadelphia, for H. C. Holinger. The improvement will have columns, walls, floors and roof of concrete, and will cost upwards of $200,000. It will cover a ground area 142 by 70 feet.

The contract for the construction of the Inasmuch Mission on Locust street, Philadelphia, has been awarded to the Harrison C. Rea Company, Philadelphia, and work was started this month. The building will be reinforced concrete construction throughout, including floors, stairways and two of the outside walls. The contractors have installed a Ransome mixer below street level on Locust street, so that materials are handled direct from the sidewalk level. A tower 60 feet in height has been built, by means of which the mixed concrete in half-yard buckets will be hoisted and delivered to the different floors. Wooden interchangeable forms will be used, which will reduce form expense to a minimum. The Coplay Cement Manufacturing Co., Penna. Bldg., Philadelphia, has been awarded the contract for the cement, and Saylor brand will be used exclusively.

Bisbee, Ariz., Aug. 19.—What is said to be one of the most remarkable feats in the way of concrete construction ever accomplished in this country will be finished in the mine of the Calumet and Arizona Mining company about September 1. It is the concreting of the Junction shaft of that property. The shaft is 1,500 feet deep and of five compartments. One of the compartments is 11 feet wide, another four feet and the three others each five feet. The concreting was carried on in all five compartments at the same time without interfering with the steam pipes, water columns and other equipment. The concreting of the 700-foot shaft of the Old Dominion mine at Globe was recently finished. Concrete is rapidly replacing wooden timbers in all of the principal mines of the Southwest. The strength and durability of the material is giving it general recognition among mine operators.

Use of Cement in Cold Weather

By Harry B. Warner.

The late fall and winter are the most convenient times to do cement and concrete work on the farm, because during these seasons other work is slack and time and labor are most readily available.

It has been the general practice to stop all concrete work at the beginning of cold weather; today this is absolutely unnecessary. Concreting can be most successfully carried on through the coldest weather, but certain very simple and reasonable rules must be followed. The two points to be religiously guarded against in winter concrete work are:

1st—The use of frozen sand or gravel in making the concrete.

2nd—The freezing of the concrete within 48 hours after placing in the forms.

Frozen material in the mixture prevents the cement from properly coating the sand and stone and is sure to result in soft spots in the concrete; while the freezing of the concrete before it has had time to harden will greatly retard the hardening and may, if followed by alternate freezing and thawing, affect the ultimate strength of the concrete. Concrete which has achieved its final set and has had a chance to harden for 48 hours before being frozen is not subject to damage by freezing, although it should be allowed a longer time to harden if possible. Concrete gains its hardness and strength very much more slowly at low temperatures, hence a longer time should be given in cold weather before removing the forms.

Salt Lowers Freezing Point.

To avoid the use of frozen aggregate and further avoid the early freezing of the concrete, the following methods are valuable:

1st—Dissolve 5 to 10 per cent of salt in the water used in mixing the concrete. (For example, one-quarter pound of salt to five pounds of water.)

2nd—Heat the materials prior to mixing so that the concrete when poured in the forms is at a temperature of between 50° and 70°.

3rd—Protect the concrete from the cold after placing in the forms.

Salt water lowers the freezing point of the concrete and salt in quantities up to 10 per cent of the weight of the water used has no material effect on the ultimate strength of the concrete. Each per cent of salt lowers the freezing point approximately one degree, so that it cannot be made effective for temperatures below 22°. Moreover, salt is objectionable where appearance is a factor, as it may cause an efflorescence on the surface of the work, and it should not be used where the concrete is reinforced, as it may corrode the steel. Consequently, it is the least desirable means of protection against freezing.

Heating More Satisfactory.

Heating the stone, sand and water and protection of the work until the concrete is sufficiently strong to withstand being damaged by freezing is the most satisfactory method. The materials heated may be the aggregate (sand and stone) only, the water only, or both aggregate and water. Do not heat the cement. To heat the sand and stone, anything on which sand and gravel may be placed and which will stand a fire underneath will answer. One of the simplest and most satisfactory methods is to pile the sand over one or more lengths of metal road culvert pipe, build a wood fire in the pipe and arrange a little flue at one end to provide a draft. If culvert pipe is not available, any sheet metal, such as old corrugated roofing, may be bent into an arch or half circle and will make a satisfactory substitute. If steam is available the aggregate may also be heated by covering it with a tarpaulin, old canvas, carpet, etc., and introducing steam underneath, or by allowing the steam to pass up through the materials.

Try to heat the aggregate to a temperature of between 100° and 150°.

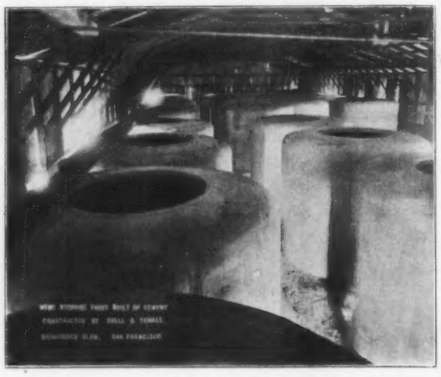
The water may be heated in a large kettle such as is used for preparing lime sulphur spray, or, if steam is available, by piping the steam into the water barrel. Water may also be heated by being allowed to flow through an iron pipe coil which is placed over a fire. In this method, however, the water must flow very slowly to be satisfactorily heated.

If both sand and stone are well heated, it is not necessary to heat the water, unless the weather is exceedingly cold. On the other hand, heating the water alone is less satisfactory than heating the aggregate alone. The aim should be to have the mixed concrete (stone, sand, water and cement) at a temperature of between 50° and 70° when it goes into the forms.

Concrete Should Be Protected.

In freezing weather concrete should be protected for the first few days after it is placed. Work such as floors, sidewalks and foundations can be very simply protected by spreading tarpaulins, building paper or even old newspapers over them and placing on this a four to six-inch layer of manure or sawdust. Manure if placed directly on fresh concrete may leave stains. For walls, troughs, curbs, etc., the wooden forms give sufficient protection to the sides in ordinary freezing weather, provided the concrete was placed at a proper temperature. The tops can be protected by paper and manure, as just described. In very cold weather additional protection may be given walls by building paper furred an inch or two from the forms. Thick and massive concrete structures need much less protection than thin light work. Concrete buildings are often protected against freezing by the use of inside heating for the first few days. Salamanders fired with coke or anthracite coal are generally used.

Even if the temperature is considerably above freezing cement hardens more slowly in cool weather than in warm weather, especially if the cool spell is associated with damp weather. This is especially the case during cool, damp days of the late fall. But while all cements are slow in setting and slow in getting their strength under these circumstances, it does not affect the ultimate strength of the concrete.



CONCRETE WINE STORAGE TANKS AS USED IN CALIFORNIA.

An American consul reports that a foreign firm anticipating a growing demand for concrete mixers in connection with important irrigation projects soon to be undertaken would like to get in touch with some American firm making a suitable mixer, as it desires to secure an agency. Communicate with Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D. C. No. 11456.

Over 2,000,000 concrete blocks have been used so far in the new $10,000,000 plant of the Minnesota Steel Co., at New Duluth, Minn. The company is now about to start the construction of 200 concrete block houses and 65 apartment buildings, each to accommodate six families. The plans, which have been prepared by Dean & Dean, architects, Chicago, call for block walls and monolithic floors. Considerably over 100,000 barrels of Universal Portland cement has been used in the new buildings of the Minnesota Steel Co.

The Department of Agriculture, Pennsylvania State College, Bellefonte, Pa., is building a monolithic reinforced concrete silo on the college farm, which adjoins the college campus. The silo is 16 feet in diameter and 32 feet in height, with walls six inches thick. The steel reinforcement is placed in the exact middle of the walls and runs both horizontally and vertically. While the silo is intended primarily for storing feed for the cattle on the experimental farm operated by the college, it is also to be used as an example of the proper method of constructing farm silos and for the general information and instruction of the students in farming and the general farming public throughout the state.

FIRST NATIONAL CONFERENCE ON CONCRETE ROAD BUILDING.

Preliminary announcements have been made of the First National Conference on Concrete Road Building to be held in Chicago, February 12, 13 and 14, 1914. This conference is to be convened in pursuance of the following resolution adopted at the annual meeting of the Cement Products Exhibition Co., held May 13, authorizing and directing the Executive Committee to call such a conference.

Dr. William Freeman Myrick Goss will be temporary chairman. Dr. Goss is dean of the College of Engineering of the University of Illinois and director of the United States experiment station at Champaign, Illinois, and is president of the American Society of Mechanical Engineers. An advisory board has been named consisting of representatives of various interests largely concerned with the improvement of public highways.

The program for the conference is now in preparation. It is intended that invitations to participate in this conference shall be issued to all public highway officials in the United States, including county and township officers, state engineers, members of park boards, officers of good roads committees and automobile corporations, good roads organizations, railroad officials, agricultural societies, technical schools and engineering societies.

Present indications justify the prophecy that the gathering will serve a useful and important purpose. It is hoped that one of the results will be the fostering of public sentiment in favor of permanent road construction. The advent of motor transportation on our highways has created the necessity for a different type of road construction than was formerly required. The use of concrete for sidewalks is today well-nigh universal. Its extension into the field of road-building has been a natural step. The concrete road as a substitute for macadam, gravel, clay and dirt roads is attracting wide attention and it is the subject of much investigation and general interest.

The Conference on Concrete Road Building has been called for the purpose of discussing concrete road construction in all its aspects to conserve the interests of the public by collecting and disseminating reliable information on the building of concrete roads—for standardizing methods of construction and to emphasize the necessity of care, good workmanship, the selection of proper materials and the intelligent administration of road construction.

CONCRETE WINE TANKS.

From the beginning of the California wine industry, wooden tanks and casks have commonly been used for fermenting and storing the material, but of late years many experiments have been made with receptacles of more substantial material. Underground tanks, or concrete-lined cisterns, have been tried with some success; but up to this year the idea of portable concrete tanks had not been developed.

This idea has now been successfully developed, however, by Snell & Dennis, concrete contractors of San Francisco, who during the summer built 36 portable reinforced concrete tanks in the winery of Arthur Lachman, a leading producer of fine wines and fruit brandies.

The tanks have a capacity of 6,000 gallons each, and stand 10 feet high, the walls having a thickness of about 2 inches. As seen in the illustration, the walls are arched over at the top, so that the tanks can be tightly closed with wooden covers when desired.

The tanks were completed in July, and have been in constant use for the last two months in fermenting this year's vintage. Mr. Lachman says they are giving excellent service, showing no effect whatever from the chemical action of fermentation, and believes they will last indefinitely.

While the demand for tanks has been curtailed this year, Mr. Snell anticipates considerable business in this line next season.

A large bathhouse and swimming pool will be erected at once at Allenhurst, N. J., private plans having been completed, and George B. Cade, borough clerk, advises that he will soon be ready for bids on the entire structure. The building will be of concrete construction with marble exterior finish, and will be one of the largest and handsomest of the many similar buildings that have been erected in recent years in the New Jersey coast resorts. It will be 326 feet deep with a frontage of 275 feet, one story in height. The large swimming pool will be entirely of concrete, and like the floors of the building, will be covered with tile. All cement work will be thoroughly waterproofed. Construction will be started this fall and the building and pool will be completed this winter in time for service.

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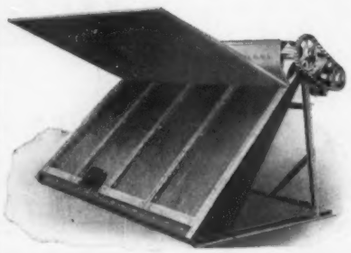

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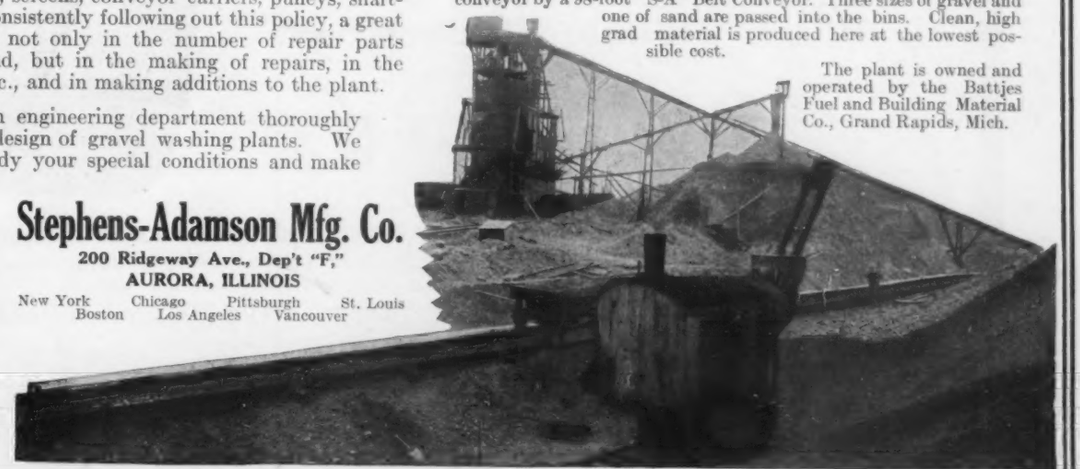
The plant is owned and operated by the Battjes Fuel and Building Material Co., Grand Rapids, Mich.



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LOUISVILLE CONCRETE NEWS.

Normal Amount of Business Being Booked—Sidewalk and Silo Construction Principal Items of Activity.

Louisville, Ky., October 18.—Things have been fairly active of late among concrete men, for while building has not been up to the mark, the steadily increasing use of concrete in other lines of work has served to keep things moving. Blocks have been in fair demand for foundations, while sidewalks and other work of that general nature have made up the balance of the work.

The Culley Concrete Block Company, of Louisville, has been handling a good business in blocks for foundation work. The company has been able to keep its men and teams busy, in spite of the fact that work is not up to last season's mark. The number of small dwellings going up is good, and while they do not make much of a showing on the total of the building inspector's report, they keep the demand for blocks up to the mark, and the company has nothing to complain of in this respect.

The National Concrete Construction Company, of Louisville, is making good progress on a rather unusual job in Louisville, this being a pair of elevated tanks, to be used for the storage of sand and gravel by the Ohio River Sand Company, of Louisville. The work will take some time.

Forest Oaks, of Smith Grove, Ky., recently finished the construction of one of the largest silos in that section, a concrete affair 45 feet high, for Scott Richardson, a prosperous farmer. Mr. Oaks has built a number of concrete silos during this season, and finds the call for them increasing, as they are highly recommended by the State Department of Agriculture.

Concrete sidewalks to the amount of 42,000 square feet have been constructed in Bardstown, Ky., during the latter part of the summer, Will Johnson, of New Haven, Ky., having done the work. The price received was 13½ cents a square foot.

Hardin Downey & Son, of Liberty, Ky., recently constructed a concrete watering trough for the town on the court-house square.

The Wood Mosaic Company, whose plants in New Albany, Ind., and Highland Park, a suburb of Louisville, Ky., were destroyed by fire recently, is rebuilding both plants with concrete and steel to avoid the possibility of future destruction by the same agency.

The contract for laying 1,200 feet of concrete walks at the Western Kentucky State Normal School, Bowling Green, Ky., was awarded recently to W. F. Ennis.

Frank Whittey, a well known concrete contractor of Louisville, died recently of pneumonia at the home of his brother. He was 45 years of age and had been ill a month. Funeral services were held at St. Louis Bertrand church.

The Marion Concrete Company was organized recently at Lebanon, Ky., with a capital stock of $3,000. The incorporators were A. P. Rickets, J. H. Howard, Mary E. Rickets and Emma Howard.

Mark A. Wilson, of Chattanooga, Tenn., recently obtained the contract for building the new court-house at Ooltewah, Tenn., of brick and reinforced concrete. The court-house will cost $10,000. The building will be fireproof throughout.

A large part of the work to be done by the Henry Bickel Company, of Louisville, on the $178,000 sewer job awarded to it recently, will be reinforced concrete, much of the sewer mains being of this material, according to the specifications of the city engineering department.

MEMPHIS' NEW RAILROAD STATION.

The permit was issued on June 5 for the depot of the Illinois Central R. R. which will be erected on Calhoun street about the site of the old Union depot at the corner of South Main street. The yards and terminals will be extensive and will cost around a million. They have been under way some time. The building will be fireproof, used for offices and depot, eight stories high, steel construction. It will be 207 by 141 feet, the first three stories being of stone and the balance of pressed brick and terra cotta. The general character of the building will be steel frame with tile floor arches and tile partitions. It is steam heated.

The architects are D. H. Burnham & Co., of the Railway Exchange building, Chicago, and A. S. Baldwin, engineer of the Illinois Central, at Chicago, representing the company. The contractors are the James Alexander Construction Co., of 388 North Front street, Memphis, Tenn.

While the depot is built by the Illinois Central, it will also be used by the Frisco and the Rock Island, which latter line has in early contemplation a suspension bridge over the Mississippi river here. At the time the present Union depot was built by the other roads entering Memphis, the Illinois Central finally determined not to use same but to build one of their own. The other, or Union depot, stands one block east on the same street and in convenient walking distance, a boulevard leading to same.

Work will commence on the new I. C. depot late in June and it will be completed some time this year. A temporary depot will be erected to use during the construction and the Poplar street station will also be utilized in the interim. The press of Memphis, the traveling and business public rejoice at this stroke of enterprise on the part of the Illinois Central system and felicitate themselves that Memphis captured the contract.

GERMAN CEMENT-CONCRETE TILE MANUFACTURE.

(Consul General Robert P. Skinner, Hamburg.)

Recent publication of a brief report in regard to German cement-tile machinery has aroused widespread interest in this subject apparently in the United States and a demand for supplementary information. According to statistics, the accuracy of which can not be verified, German manufacturers now are producing 600 million clay tiles and 200 million cement-concrete tiles annually. The informant who furnishes these figures is under the impression that the production of these articles in the United States is scarcely one-tenth of the German output, and that the American cement-concrete roofing-tile industry is in its infancy.

Although improvements have been made in the machinery necessary for the manufacture of tiles, all of the presses at present on the market seem to involve the mixing of the concrete as one operation, and thereupon the pressing of the tile, necessitating a considerable amount of hand labor. An effort is being made to introduce a new press which automatically measures out the necessary quantities of sand and cement, mixes them, delivers them into the press, colors the tile, and delivers it finally in a metal form, two men only being necessary to operate the machine. The forms containing the freshly pressed tiles are stacked in the open air for twenty-four hours and are then sufficiently hard to be removed. It is claimed that all perfect tiles are produced, whereas clay tiles consist of firsts, seconds and thirds.

According to the manufacturer of this machinery, the device is capable of producing 6,000 pieces in ten hours at a cost of $9.06 per 1,000 for a 9 by 12 inch size, thus calculated: 600 kilos (1,323 pounds) cement at $7.14 per metric ton, $4.28; 1½ cubic meters sand at 71 cents per cubic meter (1.31 cubic yards), $1.07; labor per 1,000, $1.43; paint for coloring the tiles and oil for greasing the forms, $0.84; coal per 1,000 (8-horsepower engine, $1.43 per day), $0.24; depreciation on machinery per 1,000 ($7.14 per day for 6,000), $1.20. The makers of this machinery are endeavoring to sell manufacturing licenses and are not prepared to deal with cement-tile manufacturers themselves. They have erected one show plant at Kiel, which is being exhibited to visitors and which is alleged to be doing all that is claimed in respect to it.

There are many types of cement-tile presses on the market of the usual kind, but apparently only one which produces a tile 52 by 26 inches in size.

In reference to presses capable of producing tiles 52 by 26 inches in size, a technical adviser on this subject writes as follows in reply to special inquiries:

The usual size of tiles in Germany is 15.94 by 9.83 by 0.51 inches. These tiles usually are made upon revolving presses and rarely upon flat presses. In making gutter tiles of larger size by machinery, the shape causes difficulties and they are made, therefore, almost without exception by hand over plaster of Paris forms. Thus made, they can be produced as large as 23.62 by 15.75 inches. It is impossible to produce roofing tiles 52 by 26 inches by machinery.

An actual manufacturer of tile-making machinery writes that the largest sizes made in Germany are 7.87 to 9.84 inches by 15.75 to 19.69 inches. The normal German sizes are much smaller, 6.3 by 13.39 inches to 7.09 by 14.96 inches and of a thickness of 0.55 to 0.67 inches.

[The names of German manufacturers of tile machinery that accompanied the foregoing report may be obtained upon request from the Bureau of Foreign and Domestic Commerce, Washington, D. C.]

The question of freight classification and rates on articles made of concrete will be considered by the official classification committee at the meeting they will hold in New York on Tuesday, September 23, 1913. Rates and classifications already exist on a great many concrete articles, but hitherto no attempt has been made to arrange and classify them under the general heading of "Articles Manufactured of Concrete." If this proposition is considered favorably by the classification committee, the concrete industry will receive a well-merited recognition by the railroads, and the shipment of the many concrete articles that have entered into the commerce of the country will be greatly simplified. Incidentally, it is believed that a railroad classification, enumerating in a separate group all the various concrete articles which are now being manufactured and shipped, will prove to be both interesting and instructive to a great many people who have not kept in touch with the wonderful development of the concrete industry.

NEW ILLINOIS CENTRAL RAILROAD STATION FOR MEMPHIS, TENN.

Seventh Chicago Cement Show

COLISEUM, FEBRUARY 12-21, 1914

The National Market Place of the Concrete Industries.

TENTH ANNUAL CONVENTION

AMERICAN CONCRETE INSTITUTE

CHICAGO, FEBRUARY 16-20, 1914

THE things that make a trip to the CEMENT SHOW worth while for every architect, engineer, contractor, dealer and cement products manufacturer are the opportunities of meeting face to face hundreds of men in kindred lines of the industry---of receiving inspiration from contact with the enthusiam of others---of viewing a comprehensive array of the country's best products, machinery, materials, devices and methods exhibited by the following representative American manufacturers:

Acme Tile Machine Co., LaGrange, Ind.
American Asphaltum & Rubber Co., Chicago.
American Cement Machine Co., Madison, Wis.
American Saw Mill Machinery Co., Chicago.
American 3-Way Prism Co., Chicago.
American Steel and Wire Co., Chicago.
Anchor Concrete Stone Co., Rock Rapids, Iowa.
Anti-Stick Co., Westerville, Ohio.
Architectural Mold Co., Detroit, Mich.
Archer Iron Works, Chicago.
Arrowsmith Concrete Tool Co., Arrowsmith, Ill.
Atlas Engineering Company, Milwaukee.
Badger Concrete Mixer & Machinery Co., Milwaukee, Wis.
Baker Co., The R. D., Detroit, Mich.
Baute Cement Machinery Mfg. Co., Benton Harbor, Mich.
Blaw Steel Construction Co. Pittsburgh, Pa.
Bonney-Floyd Co., Columbus, Ohio.
Blystone Machinery Co., Cambridge Springs, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Carpenter & Co., Geo. B., Chicago.
Cement Era, The, Chicago.
Cement & Engineering News, Chicago.
Cement World, Chicago.
Chain Belt Company, Milwaukee, Wis.
Chicago Builders Specialties Co., Chicago.
Clover Leaf Machine Co., South Bend, Ind.
Concrete Age, Atlanta, Ga.
Concrete-Cement Age, Detroit, Mich.
Concrete Supply Co. Arrowsmith, Ill.
Corrugated Bar Co., Buffalo, N. Y.
Cropp & Co., A. J., Chicago.
Crown Point Spar Co., New York City.
D. & A. Post Mold Co., Three Rivers, Mich.
Davis Acetylene Co., Elkhart, Ind.
Decorators Supply Co., Chicago.
Dickman & Ortman, Cincinnati, Ohio.
Dunn Manufacturing Co. W. E., Chicago.
Elite Manufacturing Co., Ashland, Ohio.
Engineering & Contracting, Chicago.
Engineering News, New York City.
Engineering Record, New York City.
Eureka Machine Co., Lansing, Mich.
Ferguson & Co., Samuel F., Danville, Ill.
Foote Foundry Co., J. B., Fredericktown, Ohio.
Garden City Sand Co., Chicago.
Hall- Holmes Mfg. Co., Jackson, Mich.
Handy Sack Baler Co., Cedar Rapids, Iowa.
Hercules Cement Vault Co., Chicago.
Hobbs Concrete Machinery Co., Detroit, Mich.
Huron Portland Cement Co., Detroit, Mich.
Ideal Concrete Machinery Co., Cincinnati, Ohio
Illinois Steel Co., Chicago.
Indianapolis Cable Excavator Co., Indianapolis, Ind.
International Motor Company, Chicago.
Jaeger Machine Co. Columbus, Ohio.
Jones Streator Boiler Works Co., Wm. B., Streator, Ill.
Kent Machine Co., Kent, Ohio.
Knickerbocker Co., The, Jackson, Mich.
Kramer Automatic Tamper Co., Peoria, Ill.
LaGrange Specialty Co., LaGrange, Ind.
Lansing Co., Lansing, Mich.
Laughlin Manufacturing Co., Dayton, Ohio.
Lehigh Portland Cement Co., Allentown, Pa.
Marble Mosaic Company, Milwaukee, Wis.
Michigan Portland Cement Co., Chelsea, Mich.
Miles Manufacturing Co., Jackson, Mich.
Milwaukee Concrete Mixer Co., Milwaukee, Wis.
Multiplex Concrete Machinery Co., Elmore, Ohio.
Newaygo Portland Cement Co., Grand Rapids, Mich.
New-way Motor Co., Lansing, Mich.
Northfield Iron Co., Northfield, Minn.
Norwalk Mold Co., Norwalk, Ohio.
Norwalk Vault Co., Norwalk, Ohio.
Novo Engine Co., Lansing, Mich.
Ohio Post Mold Co., Toledo, Ohio.
Original Gas Engine Co., Lansing, Mich.
Oshkosh Manufacturing Co., Oshkosh, Wis.
Park Co., H. L., Reading, Mass.
Peerless Brick Machine Co., Minneapolis, Minn.
Peerless Portland Cement Co., Union City, Mich.
Peninsular Portland Cement Co., Jackson, Mich.
Raber & Lang Mfg. Co., Kendallville, Ind.
Radford Publications, Chicago.
Reed, R. R., Ashland, Ohio.
Reichert Manufacturing Co., Milwaukee, Wis.
Road-Maker, The, Des Moines, Iowa.
Rock Products, Chicago.
Salisbury & Co., W. H., Chicago.
Sandusky Portland Cement Co., Sandusky, Ohio.
Sasgen Derrick Co., Chicago.
Sauerman Brothers, Chicago.
Schaefer Mfg. Co., Berlin, Wis.
Simpson Cement Mold Co., Columbus, Ohio.
Standard Scale & Supply Co., Chicago.
Standard Tool & Mfg. Co., Indianapolis, Ind.
Steam Shovel & Dredge Journal, Chicago.
Sterling Wheelbarrow Co., Chicago.
Thomas Elevator Co., Chicago.
Toledo Wheelbarrow Co., Chicago.
Troy Wagon Works Co., Troy, Ohio.
Universal Concrete Mold Co., San Diego, Cal.
United Wire Tie Co., Toledo, Ohio.
Universal Crusher Co., Cedar Rapids, Ia.
Universal Portland Cement Co., Chicago-Pittsburgh.
Van Duzen, Roys & Co., Columbus, Ohio.
Van Guilder Hollow Wall Co., Rochester, N. Y.
Wabash Portland Cement Co., Detroit, Mich.
Wert, C. S., Kendallville, Ind.
Whitman Agricultural Co., St. Louis, Mo.
Wolverine Portland Cement Co., Coldwater, Mich.
Wyandotte Portland Cement Co., Wyandotte, Mich.
Zagelmeyer Cast Stone Block Mchy Co., Bay City, Mich.
Zeiser Brothers, Berwick, Pa.

DALLAS CONSTRUCTION.

The Missouri, Kansas & Texas Railway Company, of Texas, completed quite recently one of the most modern and up-to-date general office buildings for its own use to be found in the United States. It is located in Dallas, Tex., in proximity to Main and Commerce streets, stands with basement eight stories, of a beautiful dark brick with lighter terra cotta trimmings, an array of plate glass.

The Dallas Dry Goods Company, of Dallas, Tex., is erecting the handsome building pictured on this page. The structure is 200x300 feet, built of reinforced concrete and was designed by Architects Brickey and Brickey, 1313-1314 Praetorian building,

EDWARDS RESIDENCE, DALLAS, TEXAS.

Dallas. Considerable terra cotta ornamentation and much tile work will figure in the building.

* * *

The Edwards residence, a picture of which appears on this page, marks the architectural possibilities of brick, stucco and tile, whose harmonious relations produce an effect altogether pleasing. The lower story is constructed with a dark brick, in striking contrast to the stucco which surfaces the upper half of the building. A Spanish tile roof enhances the beauty of either medium and in this combination is all the more ornate because of the contrast of color.

* * *

The concrete viaduct at Dallas has received universal attention because of its architectural beauty and on account of the substantial manner in which it is constructed. The bridge spans the Trinity river and connects Dallas with Oak Cliff, a fashionable residence section of that wonderfulfy progressive city of the South.

* * *

The Dallas Dry Goods Company, Dallas, Tex., has been organized with a proposed capital stock of $2,000,000, and had plans prepared by Brickey & Brickey, architects, Dallas, and let contract to McCavick Construction Company, Kansas City, Mo., and Dallas, for erection of modern business building. To secure the highest efficiency and save time, it will be equipped with mechanical devices, carriers, pneumatic tubes, etc., of the latest design. The equipment in these respects will be the highest type yet attempted in designing commercial plans.

Reinforced concrete construction will be used for the building, which is eleven stories and basement, and which will give a floor space of approximately fifteen acres. The design will be of strictly commercial type, yet such as to produce a pleasing effect. Plain and simple lines, with large glass areas and steel-sash windows, will afford ample light and air and emphasizes the commercial utilities for which it is planned. Four elevators will be provided and fire escapes will be enclosed stairs of reinforced concrete. Elevator doors operated by hydraulic lifts and of a design provided by the architects to meet the unusual demands of the business, will be built into the elevator shafts and all cars will be operated at high speed.

CONCRETE VIADUCT, DALLAS, TEXAS.

A contract for 16 miles of concrete sewer pipe has been let to the California Glazed Cement Pipe Company, of Los Angeles, Calif., for the city of San Diego. F. C. Bayless, city inspector of the latter place, supervised some interesting tests of concrete pipe the middle part of June. One pipe 6-inch, mixture 1.6, five days old, stood 90 pounds pressure without leaking or breaking. One pipe 6-inch, mixture 1.8, four days old, stood 30 pounds without leaking or breaking. These tests were made on glazed cement pipe made with a Thomas glazed cement sewer pipe machine.

CINDER CONCRETE.

It has always been an open question whether cinder concrete is really a protector or a corrosive agent when placed around structural steel as a rust preventive or as fireproofing. In the majority of cases where corrosion has occurred, it has been due probably to the porous character of the mixture and its failure on that account to prevent penetration of moisture and noxious gases, rather than to the presence of sulphur or other chemically active corrosive agents in the cinders themselves, says a writer in The Improvement Bulletin. With these facts in mind, it appears that where cinder concrete is used to protect structural steel on account of its relatively light weight, and not to carry loads, the following specifications will aid in producing good cinder concrete:

1. Coat all steel to be in contact with cinder concrete, with Portland cement grout.

2. Use only best quality of steam boiler hard coal cinders, crushed to pass a 1-inch mesh, and freed from ash and foreign matter. Wash all cinders thoroughly, and use only those which have been stored and exposed to weather for some time, if possible.

3. The mixture employed should not contain too great an amount of cinders. The proper proportions of cement, sand and cinders would be those which by test give the densest mixture.

4. Water in amounts necessary to produce a very wet mixture should be used.

5. The time required for mixing should be somewhat longer than for stone concrete, in order that a uniform mixture may be acquired.

M. K. & T. RAILROAD BUILDING, DALLAS, TEXAS.

6. In placing, remove all light, floating particles of cinder, which, if left in concrete, produce a porous surface.

7. Cover all cinder concrete with a coat of cement mortar, ½ inch to 1 inch in thickness, or with some waterproofing material, as an extra precaution toward preventing admission of air and moisture into concrete.

CONCRETE TILE TEST IN ALKALI SOIL.

Roswell, N. M., Oct. 18.—Farmers of the Pecos valley region around Roswell are greatly interested in an experiment which is to be made near here of the serviceability of cement drain tile when laid in alkali soil. The test will be made under the direction of the United States Department of Agriculture. It is purposed to lay 800 feet of cement tile upon the farm of Captain Charles de Bremond. S. H. McCrory, chief of the drainage investigation department of the government, will superintend the placing of the tile in the ground. Careful watch will be made of the effect, if any, of the alkali upon the tile, and a record made of this and other features connected with the use of the tile. The fact that the ruins of prehistoric systems of irrigation in New Mexico and Arizona that are found scattered over several desert valleys still contain concrete work in a perfect state of preservation leads to the belief that the cement tile will prove impervious to the action of alkali upon its surface. If the test which is to be made near here proves the success that is expected the cement type of tile will probably come into general use in the desert regions of the West for drainage purposes. Ordinarily it would not be supposed that drainage is needed in a region where there is such a small rainfall. It is found, however, that wherever irrigation is practiced the water quickly clogs the soil, and that the only effective means of remedying this condition is by drainage, and that underground drainage is the best method.

REINFORCED CONCRETE FOR SEA WALLS.

London, Eng., Oct. 12.—Reinforced concrete lends itself admirably for the construction of defences against the encroachment of the sea. It has been used for this purpose in Holland, Germany and France, and there are several interesting examples of its use in Great Britain, notably at Thames Haven, Tilbury, Aldeburgh and Southwold. Among these are the well known Dutch systems of foreshore protection, known as De Muralt's systems. One of these systems consists of the defence of slopes and embankments by means of concrete reinforced with expanded metal or with iron rods.

The inventor claims for it the following advantages: (1) The construction and the principle upon which it is carried out obviate the difficulties appertaining to other concrete slope defences. (2) The remarkably simple construction allows it to be carried out by unskilled labor. (3) Slopes protected on this system offer great resistance to wave action. (4) A greater economy than with other systems. The cracking of the concrete in consequence of contraction and expansion is obviated by dividing the slope facing into small separate sections, the reinforced concrete facing being no longer monolithic, as is usual, but consisting of a number of separate slabs kept in place by a system of beams, the whole being constructed "in situ" with an extremely small amount of plant or form work.

De Muralt's system of building the beams on the slabs, and not the slabs on the beams, thereby weighting down the slabs by the beams, is not only different from other reinforced concrete systems, but has great advantages. Practically the whole of the concrete work can be done on the slope itself very cheaply, and simple forms can be utilized. The division of the slope facing is the ruling idea of this system of construction. One of the best examples in this country of seawall construction where reinforced concrete has been introduced in a part of the structure is the new sea wall at Hornsea, Yorkshire. The old sea defences, which were of a very temporary character, were practically destroyed by severe gales in 1906, which also worked havoc upon the cliffs of Holderness to the north and south of Hornsea.

The new works, which are fulfilling their purposes very efficiently, were commenced soon after the severest storm occurred in 1906 and were completed during the summer of 1907. The lower sea wall is of plain concrete, while the upper wall is reinforced by the insertion of expanded metal and steel rods. The sea wall is 720 feet in length and when the wall was erected three new groynes were also put down. These are 745 feet, 430 feet and 400 feet in length, respectively. Another good example of the use of reinforced concrete in shore protection work is to be found at West Hartlepool. The reinforcement used was expanded metal. A row of 12-inch by 12-inch timber piles, each 9 feet long and spaced at 9-foot centers, was driven at the foot of the slope; behind these 12-inch by 6-inch wallings were spiked, and these form a protection for the toe of the structure and also prevent sliding action occurring. The average height

DALLAS DRY GOODS CO. BUILDING, DALLAS, TEX.

of the sea wall above the level of the top piles is 13 feet 8 inches. The foundation slab is 6 inches in thickness.

Ralph O. Miracle died a few days ago after an illness of about six months, at the age of 37 years. For a number of years R. O. and O. U. Miracle have been engaged in Minneapolis in the making of machinery for the manufacture of concrete blocks and pressed stone. Interment was at his old home in Webster City, Iowa.

"BUILT A HOUSE IN A DAY."

Seemingly Impossible Feat Performed in Canadian Town.

Just as an index to what can be done in a typical Canadian town with Canadian enterprise, Hamilton, Ont., built a 9-room house valued at $6,000 in twenty-four hours.

When Ald. James Bryers first stated that he would attempt to erect a house in one day, the idea was laughed at by a great number of people. Many were under the impression that it would be a small one-story affair. Far from it. It is an imposing two and one-half story brick structure, and is as substantially built as if it had taken weeks to complete. The handsome structure has been seen by thousands and is a never failing source of surprise to all, when it is noticed that it has nine rooms and is complete in every detail. Mr. Bryers and the men who worked on it have been the recipients of many compliments on the work.

The first sod was turned at a quarter to five on Tuesday afternoon, August 12, 1913, by Mayor Allan. Five hours later the building was up to within a few feet of the second story. As the workmen were at work all night, arc lights were strung on poles around the building. There were at midnight between 300 and 400 men at work. The carpentering went on simultaneously with the bricklaying, and as cement mortar was used a concrete mixer was kept at work.

Even now that the great task has been completed those who have not seen the house cannot realize what a handsome, modern structure it is. There are few larger, better constructed or more modern buildings in the city than the one erected by James Bryers in a single day.

Specifications.

The building is 34 by 33 feet outside measurements and may properly be called a four-story house. It contains a basement, first and second floor and finished attic. The roof is gothic in design, and the general architecture of the building is anything but simple. The foundations are cement with brick facings, the upper portion of the building proper being solid brick. Everything in the house from start to finish is the best to be had, all materials used being first grade, and in many instances extra fine. The house contains in all nine rooms. The rooms are large, with high ceilings, and every room is finished in handsome trim.

The dining room is panel finish with beam ceiling. The entire downstairs is finished in fumed oak, the upstairs in fumed oak and mahogany. Hardwood floors, narrow strip, both upstairs and down stairs, with beautiful stairway of fumed oak finish, are there. The house is double-coat plastered in hard white plaster of Paris, finished all through, and three coats of quick dry paint covers all outside parts. The doors are low panel with fancy glass reaching almost to the floors, while the windows are large, the upper windows being fancy colored glass of very pretty design. The building is hot water heated throughout with gas instantaneous hot water heater in the basement connected for use. The electrical connections and fixtures are of the highest grade, and the three-piece bath room with marble basins, bath and toilet, is also equipped with an up-to-date shower bath. Every bedroom is supplied with roomy clothes closets.

Two and One-half Hours for Plaster.

Some idea of the rapidity of the work may be gathered when it is understood that the plasterers, using special prepared quick-drying plaster, applied their first trowel of mortar at twelve o'clock, noon, Wednesday, and at 2:30 p. m., just two and one-half hours later, every room in the building, including clothes closets, were finished with second coat, hard white enamel finish in every way, just as pretty and just as well put on as is usually the case where several days are taken for doing the same work.

Beautifully Furnished.

Every room is furnished beautifully, not a single detail being overlooked. The furniture, carpets, curtains, draperies, even to the attic, were the last word in house furnishing, and proved a surprise to the large crowds who inspected it.

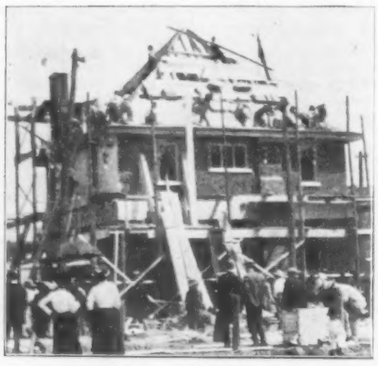
The Right House kindly loaned the house furnishings and furniture. In two hours' time they hung the blinds, draperies, etc., laid the rugs, put in the furniture and had it ready for immediate occupancy. All that was necessary to complete the picture was a happy family.

The workmen on the building are entitled to no small measure of praise. They gave their best services free, and many of them stayed right on the job from start to finish. Every individual man worked his hardest, and that they were the best men in their different lines of work can be seen by a close examination of the building.

The labor was done by men who deserve special mention. The bricklayers, plasterers, painters, plumbers, electricians, tinsmiths, steamfitters and lathers were all union men, and finished their work in the schedule time. Some of the unions supplied the men, and saw that there were plenty on the job. Others furnished Mr. Bryers with a list of men who were anxious to work on the job, and he selected the ones he thought best.

A number of Buffalo and Cleveland building contractors went over the house, and said it was the greatest achievement in house building of modern times.

One hour after starting.



Seventeen hours after starting.

Twenty-two hours after starting.

Finished—twenty-four hours after starting.

TO EXPLOIT SOUND-DEADENING AND FIREPROOFING MATERIAL.

The Kieselguhr Company of America, which has bought out the Magna Silica Company's plant and works at Lompoc, Santa Barbara county, Cal., has started an active campaign for the introduction of "Sil-O-Cel," a material of proved merit for sound-deadening, fireproofing and insulating. The company will open an office in San Francisco this month, and W. S. McLean, who has acted as sales manager for the Holmes Lime Company for the last five and one-half years, will be placed in charge of all the northern California business, taking offices in the Monadnock building.

Sil-O-Cel is a material sold in the form of an impalpable powder, and has a wide variety of uses. It has been on the market about six years and, while not fully exploited in the past, has been used with great success as an insulator and deadener in many fine buildings of California, including the Stanford University, the Stewart hotel, Duboce Apartments and Richelieu hotel, San Francisco; the Oakland Meat Market and Stockyards; the University of California library, and numerous schools throughout the state.

PENNSYLVANIA TO BUILD CONCRETE ROAD.

The State Highway Department, Harrisburg, Pa., in keeping with the decision to build only the best permanent roads, has decided to reconstruct the present road in Dorrancetown Borough, Luzerne county, of concrete, to which will be applied a wearing surface of asphalt. The road will be 4,215 feet in length, and will be 39 feet wide. The contract will be awarded the latter part of this month, and it is expected that construction will be started at once and the road completed in time to be of use during the winter and spring, as traffic over this particular section is always very heavy. The State roads of Pennsylvania are recognized as the best in the country, and as concrete as a road material was taken up by the department this year, it is expected that many such roads will be constructed during the new year, as those already in use are showing their great superiority over any other form of road. Already several large local road contractors, recognizing that the future road will be of concrete, are preparing to make a specialty of this class of road construction, and will have large and adequate plants assembled by spring.

T. Poole Maynard, Ph. D., mining and consulting geologist; T. E. Carter and J. C. Carter, engineers, announce their association at 321 James building, Chattanooga, Tenn., as civil, mining and geological engineers qualified in all branches of geological and allied lines of engineering investigation. This association makes it possible to render complete reports both on the geological and the engineering phases of mining and mineral properties. Reports on mines developed and undeveloped mineral properties, railroad and land surveys will be given.

Consul General Julius G. Lay, of Rio de Janeiro, states, under date of August 26, 1913, that the proposed rate of duty on cement in Brazil is 15 reis per kilo, instead of 215 reis per kilo, as printed by typographical error in the Diario Official and reported by the consul general on August 7 and 8, 1913. The proposed rate is the same as that in force since January 1, 1913, but owing to a change in the basis of payment will result in a slight decrease (from 32.1 to 30.6 cents per 100 pounds). The statement in the second paragraph on page 1618 on the Daily Consular and Trade Reports for September 22, 1913, should be amended accordingly.

Webster Engineering Co., 301-303 Stock Exchange Bldg., Chicago, Ill., announce their entrance into the engineering and contracting field. The company will specialize on the correct mechanical handling of materials and is in position to work out problems, furnish and erect machinery, or to bid on plans for furnishing the machinery and erecting it. The personnel of the firm is W. K. Webster, president; T. K. Webster, Jr., vice president, and Karl D. Vittum, secretary and treasurer, who are well known in this field, having been for some time connected with the elevating and conveying trade. The concern has a well-equipped engineering department and is in position to give the right kind of service.

QUARRIES

STANDARD TESTS FOR ROAD MATERIALS.*

Committee D-4 recommends for adoption the following definitions of terms, with the understanding that they are intended to apply to materials of interest in road and paving work.

Asphalts.

Solid or semi-solid native bitumens, solid or semi-solid bitumens obtained by refining petroleum, or solid or semi-solid bitumens which are combinations of the bitumens mentioned with petroleums or derivatives thereof, which melt upon the application of heat and which consist of a mixture of hydracarbons and their derivatives of complex structure, largely cyclic and bridge compounds.

Asphaltenes.

The components of the bitumen in petroleums, petroleum products, malthas, asphalt cements and solid native bitumens, which are soluble in carbon disulphide but insoluble in paraffin naphthas.

Blown Petroleum.

Semi-solid or solid products produced primarily by the action of air upon originally fluid native bitumens which are heated during the blowing process.

Carbenes.

The components of the bitumen in petroleums, petroleum products, malthas, asphalt cements and solid native bitumens, which are soluble in carbon disulphide but insoluble in carbon tetrachloride.

Cut-Back Products.

Petroleum or tar residuums which have been fluxed with distillates.

Tars.

Bitumens which yield pitches upon fractional distillation and which are produced as distillates by the destructive distillation of bitumens, pyrobitumens or organic materials.

Coal Tar.

The mixture of hydrocarbon distillates, mostly unsaturated ring compounds, produced in the destructive distillation of coal.

Coke-Oven Tar.

Coal tar produced in by-product coke ovens in the manufacture of coke from bituminous coal.

Dehydrated Tars.

Tars from which all water has been removed.

Gas-House Coal Tar.

Coal tar produced in gas-house retorts in the manufacture of illuminating gas from bituminous coal.

Oil-Gas Tars.

Tars produced by cracking oil vapors at high temperatures in the manufacture of oil gas.

Pitches.

Solid residues produced in the evaporation or distillation of bitumens, the term being usually applied to residues obtained from tars.

Refined Tar.

Tar freed from water by evaporation or distillation which is continued until the residue is of desired consistency; or a product produced by fluxing tar residuum with tar distillate.

Water-Gas Tars.

Tars produced by cracking oil vapors at high temperatures in the manufacture of carburetted water-gas.

Respectfully submitted on behalf of the committee,

L. W. PAGE,
Chairman.

PRÉVOST HUBBARD,
Secretary.

MINORITY REPORT OF COMMITTEE.

The undersigned members of Committee D-4, not being in sympathy with the report submitted to the society by the majority of the committee in continuation of its attempts to define certain terms used in connection with highway construction, beg leave to submit the following minority report:

A majority of the committee reported at the last annual meeting of the society, five definitions which were received and adopted by letter ballot on August 5, 1912. At the same meeting one of us presented a minority report in regard to these definitions which will be found on page 75 of the Proceedings for 1912, wherein it was stated that the definitions were, in his opinion, unsatisfactory both in matter and form, and in one instance at least, contrary to the etymological significance of the word defined, namely, that of bitumen, which was so worded as to include coal and other tars as bitumen. This definition plainly appealed to the majority of the members of the committee, and was approved by a large majority of the very small number of members voting upon its adoption by letter ballot, 78 yeas as compared with 6 nays, without having the minority report before them. The definitions having been submitted to the society for ballot in that way, the author of the minority report brought the matter to the attention of the executive committee of the society, and to one or two other members, with the result that the method of conducting the ballot was brought up at a subsequent meeting of the committee, and action was taken as shown by the following excerpt from the minutes:

"The secretary was instructed to notify Mr. L. W. Page, the chairman of Committee D-4 on Standard Tests for Road Materials, and also Mr. Clifford Richardson, a member of that committee, that it was the desire of the executive committee to have the standard definitions in question presented at the next annual meeting of the society for further consideration. It was also agreed that at that time a recommendation should be offered on behalf of the executive committee that no action shall be taken relative to the adoption of proposed standard definitions until the meeting following the publication of such proposed definitions in the proceedings of the society."

It was stated, however, that this action was taken without regard to the technical merits of the definitions objected to in the minority report, but rather with a view of reaching a solution that would be at once fair in its bearing on the present question and duly conservative in relation to such matters in the future.

In connection with this ballot, one of the leading engineering journals of this country in an editorial in August, 1912, referring to attempts at standardization in the United States, stated:

"Without wishing to detract in any way from the value of this work, there have been occasional recent evidences that the thoroughness of the Germans is not being duplicated here in connection with all of the committee work, and particularly in its scrutiny by the men to whom it is submitted for approval. There is a tendency to accept blindly anything recommended by a committee, which is dangerous. It takes courage for an engineer to make a minority report, and he is inclined to stretch his professional conscience and affix his signature to a majority report which he considers defective to a greater or less degree. Yet in these minority reports lies the sole safeguard against too hasty action, and, in matters of standardization, minority reports of committees ought to be encouraged, distributed with those of the majority and given the most careful consideration."

In a further attempt to determine how general the acceptation of such a definition of bitumen would be in other countries, the author of the minority report submitted it, together with the definitions adopted by the society, to M. Paul le Gavrian, associate secretary, International Association of Permanent Road Congresses, in Paris, asking for his opinion in the matter. In reply he stated:

"I am of your opinion as regards the abuse of the word bitumen. It should be used only to denote natural products and not the tars and their derivatives. I go even farther than you and wish that the term 'bitumen' might be reserved solely for materials containing natural bitumen."

In a "Note of the Executive Committee on an Experiment in the Terminology to be adopted for binding materials with a hydrocarbon base which are employed in Roads," appearing in No. 3, March, 1913, of the Bulletin of the Permanent International Association of Road Congresses, it proposed for adoption, at least provisionally, the following definition of bitumen:

Bitumen.

The term bitumen should apply exclusively to natural opaque blackish or dark brown hydrocarbons which are generally solid or slightly fluid and which contain a small quantity of molatile products, found in pockets or impregnated in the rock. Pure bitumen dissolves completely in bisulphide of carbon.

At the same time the committee called attention to the fact that such a wellknown authority on bitumen as Dr. George Lunge, professor at the Polytechnic School of Zurich, stated as reporter of a committee of one of the Congresses of the International Society for Testing Materials some years ago, that the replies which he had received were too few in number to allow any conclusion to be deduced therefrom as to definitions of bituminous materials.

It appears, therefore, that some of the definitions proposed by Committee D-4 and adopted by ballot of the society, would not be accepted by French experts, and that such a distinguished person as Dr. Lunge hesitates to undertake an acceptable definition of bitumen. In England the same differences of opinion are in existence as in other countries, as may be seen by the correspondence in regard to the proper definition of bitumen and asphalt which has appeared in the *Surveyor* during the past year. In consequence of this situation the undersigned do not believe that it is desirable, or will be creditable to the American Society to take part in such a controversial subject at the present time.

On the other hand, several well-known authorities support the position of the sub-committee on definitions of Committee D-4 which it takes in defining the tars as bitumen. The whole subject, it will be seen, is a highly controversial one.

As another illustration of an attempt to define an industrial term, the action of a committee of the International Society for Testing Materials which attempted to define "steel," may be cited. On finding at the last congress in New York that the subject was controversial, the committee withdrew its report and no attempt was made to have the society approve any definitions of this word.

The only object to be attained by arriving at a uniform system of nomenclature and a generally recognized definition of the meaning of certain terms is to secure uniformity, accuracy and convenience in their use, and that there shall be no confusion in the way in which they are employed by various writers, as is too often the case. The question arises as to whether anything but a waste of time will result in attempts which are partisan and contentious, and represent only the efforts of individuals or groups in different countries, to sustain the position which they have taken. It would seem to the undersigned that under such circumstances it would be more satisfactory to abandon anything of this kind and to recognize that, there being unreconcilable differences in existence, every writer, before he employs the terms in question, should state frankly the sense in which he uses them.

In view of these facts it would seem that no definition can be of value unless it is unanimously accepted by every one using the term. If this is not the case, nothing will be gained and the matter will still remain controversial.

Committee D-4 is again recommending at this meeting a further series of definitions which, while perhaps not so controversial as that of bitumen presented last year, except in the case of the word "asphalt," are not generally acceptable. While we might submit other definitions, which might meet our individual approval more satisfactorily than those which have been proposed, they would be in no less degree controversial and, on this account, no attempt will be made to do so at present. This minority report is made mainly with a view of bringing to the attention of the society the entire subject of definitions of industrial terms, and the methods of voting upon them, with the idea of instructing the members of the society in general as to the present status of the subject, and with the hope that it will be given careful consideration by the society at its annual meeting and by the members before voting to adopt any of the definitions that are proposed.

Respectfully submitted,

CLIFFORD RICHARDSON,
C. N. FORREST.

*Report of Committee D-4 at convention of American Society for Testing Materials, Atlantic City, N. J., June 24-28.

CRUSHING PLANT COMPLETED.

The Newton County Stone Co., of Kentland, Ind., started operating its crushing plant a few days ago. The quarry is situated on a branch line of the Pennsylvania railroad, three miles east of Kentland.

When the plant is fully completed it will have a No. 5 and a No. 7½ Austin Mfg. Co. crusher, besides a pulverizer.

The entire plant, with the exception of the electric motors and quarry pumps, is equipped with Austin Mfg. Co. machinery. The plant will have a capacity of about 1,500 tons per day, as the stone is very hard and crushes rapidly.

The stone is considered among the best in the state of Indiana for roads, concrete and fluxing, also for land fertilizer. The quarry is being opened up by hand, but a 70-ton steam shovel will be installed early next season.

Every machine on the plant is driven by electricity, there being no boilers or pipes of any kind used. The demand for the products of this quarry is more than the plant can produce.

N. H. Patnoe, who has had some thirty-five years' experience in erecting stone crushing plants and opening up quarries, and who was connected with Dolese & Shepard, of Chicago, for seventeen years, has been in full charge of the construction of the plant.

MOST SUCCESSFUL MEETING PREDICTED.

Tenth Annual Convention of American Road Builders' Association Will Be a Fitting Season's Climax in Educational Work.

Organization activity pertaining to highway construction for the past season will come to a fitting close with the holding of the Fourth American Road Congress and the Tenth Annual Convention of the American Road Builders' Association at Philadelphia on December 9, 10, 11 and 12. This will be one of the most important of the year's meetings and expositions in road-building circles. It is of vital importance through the fact the winter months offer an opportunity for a review of road building accomplished during the active season. Highway construction has now come to be a nation-wide issue, backed by a nation-wide interest in all road builders' association work.

Demonstrating, in a measure, the extensive interest in the work of the American Road Builders' Association, Governor Tener of Pennsylvania has caused to be issued an invitation to the governors of every state and to the lieutenant-governors of the Canadian provinces each to appoint three delegates to this convention. In an announcement recently issued by the publicity department of the association it is shown that responses to Governor Tener's invitation are coming in every day with the names of delegates appointed by the different state executives. Further significance of interest comes from the fact that highway engineers and contractors from all parts of the country have already signified their intention to be present at the meeting and take part in the discussions.

The exhibition of methods, materials and machinery to be held in connection with the congress will far surpass that of any previous year held by this association. The advance reservations of space for exhibits indicate that all the available space of the First Regiment Armory will be applied for long before the exposition opens. The officials in charge are planning to provide additional space beyond that included in the first plans. Many of the machinery exhibits will consist of large units, such as traction engines, rollers, trucks, etc., which are to be shown outside of the exposition hall. Much of this machinery will be exhibited in operation.

Everything entering into the construction of roadways, including machinery, appliances and materials, will be exhibited and demonstrated for the benefit of every delegate attending the congress. Further educational work will be provided with displays of sections of different kinds of roads and explanations of the best methods for their construction and maintenance.

This feature will be of especial interest to highway officials, coming as it does after the busy road building season and while plans for the next year still remain to be determined.

Still another especially valuable and interesting part of the exposition will be the national, state and technical exhibits. As in former years, these exhibits from the government and different states and the leading technical schools and colleges will comprise models, materials, testing apparatus, maps, photographs, etc., illustrating the various state highway systems and the progress which is being made in their development. At the Cincinnati convention last year 19 different exhibits of this class were shown. The idea of this class of exhibits has been greatly enlarged upon and will be more complete this year than ever before.

The officials of the association recently announced that they were anticipating the largest gathering of road builders that has ever attended any convention of the association.

NEW LIMESTONE QUARRIES IN IRELAND.

[Consul Hunter Sharp, Belfast.]

It is announced that $400,000 to $500,000 will be expended by the British Portland Cement Manufacturers (Ltd.), of London, in developing limestone and basalt quarries at Magheramorne, County Antrim, Ireland. Works are to be constructed there for the manufacture of cement for the Irish market, and a basalt crushing and screening plant established for the preparation of road material. Mills for making whiting and the extension of operations for the supply of limestone for smelting are also contemplated. Workmen's dwellings will likewise be erected. An advance of wages has been granted by the firm to those engaged in the operations, so as to have the undertaking carried out in good time, and the new rate of remuneration is 9 cents per hour, or $5.19 per week of 57 hours.

The Cynwood Quarry Company, Wilmington, Del., capital, $2,000; M. E. Grubb, Wilmington.

The Pittsburgh Limestone Co., of Pittsburgh, Pa., will build a plant at Martinsburg, W. Va.

The engine house of the Phelps Stoneman & Supply Company, of Kansas City, Mo., was destroyed by fire September 18.

Standard Supply & Construction Company, Wilmington, Del., to deal in stone, iron, steel and coke; capital stock, $25,000.

Rosedale Crushed Stone Co., Kansas City, Mo.; capital $25,000; incorporated by F. W. Freeborn, A. B. Jackson and H. A. Mohr.

Lakeland Phosphate Co., H. E. Memminger, Engr. and Mgr., Lakeland, Fla. wants prices on 15-ton locomotive crane, with 40-ft. boom.

The Wilson Gorge Rock Company, of Newton, Va., capital, $10,000 authorized and $1,350 subscribed by W. S. Barfield, C. E. Crosby and others.

Crushed stone; Rosedale Crushed Stone Company, Kansas City, Mo., capital, $25,000; incorporated by F. W. Freeborn, A. B. Jackson and H. A. Mohr.

Haynes-Gorman, Inc., Manhattan, New York; mining, quarrying, etc., capital, $50,000; incorporators S. Norman, E. M. Mohr, P. E. Neville, New York.

Springfield Rock Company, Kingsville, Tex., capital stock, $20,000; purpose, operating rock quarries. Incorporators, R. J. Caesar and R. M. Finnegan, of Kingsville.

The stone crusher plant of the J. G. Hilder Quarry, St. Cloud, Minn., was destroyed by fire Oct. 13th. The plant will be rebuilt immediately, with new machinery, and other equipment.

The Shore Line Trap Rock Company, of New Haven, Conn., has been incorporated to take over the operation of trap rock quarries in a couple of shore towns east of there. Its capital stock is $150,000 and its incorporators F. L. Mohr, J. F. O'Connor and J. W. Hamilton, all of Hartford.

A new way of quarrying slate has been introduced into the quarry of the Stephen Jackson Slate Company at Pen Argyl, Pa. At a cost of $10,000 a compressed air plant has been installed and hereafter the huge squares of slate will be quarried by mechanical methods instead of by hand, and several times as much slate will be taken out in a day as now.

The Quimby Stone Company, of Mason City, Iowa, a few days ago announced the purchase of a 22-acre tract of land, adjoining the M. & St. L. tracks, upon which will be erected a stone crushing plant of the most modern type. This will give the company direct railroad connection, and simplify to a great extent the marketing of the company's product. Plans for the new plant have not been fully worked out, but the cost will be in the neighborhood of $15,000.

Clark A. Burgess, the little fellow who carries a Compressor in one hand and an Ingersoll drill in the other, was in a happy frame of mind when we arrived at the Pennsylvania Terminal the other day, but not quite satisfied with the volume of business existing in the East. He stated that tools for the quarry and contractor manufactured by the Ingersoll-Rand Co. are more up-to-date than ever, and he would welcome an increased volume of business from the quarrymen. This is an announcement to the quarry operator that when Burgess sees you he is liable to use that large palm of his to encompass you and accumulate your order.

The Metro-Nite Company, recently organized in Milwaukee, Wis., has elected the following officers: President, James V. Rohan, Racine, Wis.; vice-president, Herbert L. Johnson, Racine, Wis.; secretary-treasurer, Edward Copps, Milwaukee; attorney, William McElroy, Milwaukee; directors, James V. Rohan, Herbert L. Johnson, Racine; Edward Copps, William J. McElroy, W. O. Mialon, Milwaukee. The company owns a deposit in northern Michigan and for the present the raw material will be reduced in the mills of the Michigan Quartz Silica Company. In the spring, the company expects to erect a large, modern mill with a capacity of 100 tons daily.

PITTSBURGH QUARRIES.

Pittsburgh, Pa., Oct. 20.—Limestone firms are still very busy. Some of them are two weeks behind with shipments. The demand for road stone has been exceptionally good this summer and a very large amount of bridge work had to be done to replace the damage by floods last spring. Building stone has not figured so prominently in the business. The shortage of labor all summer and fall has been one of the chief drawbacks to successful operation. Nearly all the western Pennsylvania plants made improvements to increase their capacity either in the spring or during the summer.

The Croyland Silica Stone & Sand Company, Ridgway, Pa., capital $25,000, has been organized by W. W. Huntley, J. V. McGorry, H. B. Alverson and H. S. Rankine, Buffalo; De Lancey Rankine, Niagara Falls; J. G. Whitman and G. H. Clough, Ridgway.

The Ellwood Stone Company, whose quarries are located in Beaver county, are reporting some "awfully nice" orders lately. They have had a splendid business all summer. The only thing the company complains of is the labor situation, and this is gradually improving. Its best call has been for curb stone, although it has sold a considerable quantity of foundation, rubble and bridge stone.

The Cleveland Stone Company, through its local manager, George J. Senn, in the Commonwealth building, is having a very successful trade both in curb and road stone. Its quarries at Amherst and Berea, Ohio, are still away behind with shipments.

The Clydesdale Stone Company, with offices in the Oliver building, reports a much better season than in 1912, especially for limestone. It is running its Beaver county quarries full time and is filling a splendid contract for stone for the Brownsville, Pa., bridge over the Monongahela river.

The Lake Trade Coal Company has been incorporated at Mercer, Pa., by the Filer interests. It has more than 1,000 acres of land under option in Venango township, Butler county, Pennsylvania, and will open up extensive limestone operations soon. Pennsylvania in 1912 produced 11.68 per cent of the entire stone output of the country, going ahead of Vermont, which only produced 8.41 per cent. This is the first time that Pennsylvania has ranked first in the production of stone.

FIRST NATIONAL MINING EXPOSITION.

As we go to press the First National Mining Exposition, given under the auspices of the American Mining Congress, is being held in Philadelphia, Pa., the official date of the convention being October 17-25. The exposition, in point of magnitude and importance, has gone far beyond the expectations of its promoters. Conceived but three months ago, its artistic and business success were assured fully a month ago. Now it promises to be one of the greatest trade gatherings ever held in this country and will undoubtedly result in great good to the industry.

"The response made by the mining men of the United States to the call for this exposition," said Richard L. Humphrey, director of the exposition, "only serves to indicate what a real need there has been existing for such an exposition. It was quickly realized that this would not be merely a show for the curious, with doubtful results to the exhibitors.

"The American Mining Congress, which is to hold its convention at the same time, will bring to Philadelphia more than 2,000 of the leading mining men of the country and these will attend the exposition, in addition to the men who will come solely for the exposition. Considering the short time the exposition has been under way, I believe that it will be a most remarkable show."

The exposition is being liberally supported by the manufacturers of various mining equipment and supplies, and a report of the convention and show will appear in the November issue of ROCK PRODUCTS.

Allen Paterson of the Bluffton Stone Co., Lima, Ohio, recently purchased one of the largest and best sand and gravel plants in the Wabash River, near Lafayette, Indiana. So Al is branching out in a new line and catering for business in the great Chicago sand and gravel markets.

The Indiana Creek Stone, Sand and Contracting Company, of Connellsville, Pa., was recently incorporated under the laws of Delaware, with a capital of $100,000. J. J. McFarland, of Connellsville, being the principal incorporator.

The power plant of the Kelly Butte Rock Quarry, near Portland, Ore., was totally destroyed by fire September 21, with a loss of $6,000, about half covered by insurance.

EXHIBITS OF ROAD MATERIALS AND ROAD MACHINERY AT WAYNE GARDENS.

Detroit Road Congress Was An Educator

Activity of Organizations Participating Brought to Open View the Spirit of Co-operation, Marking This as the "Good-Roads-for-the-Good-of-All" Age.

The four thousand delegates participating in the third annual convention of the American Highway Association, designated the "Third American Road Congress," at Detroit, Mich., from September 29 to October 4, were treated to an educational element in the nation-wide question of good roads, the force of which will prevail for many years. And the object lesson made possible by the concrete roads of Wayne county, Michigan, was fully as great a force as the eloquence prevailing at all sessions of the Congress. Practice, theory and practicability of various road-making products were considered as prime factors necessary to accomplish a broader realization of purpose, placing the work of the "Third American Road Congress" before the American people by the actual force of what has been done and what can be done.

The co-operative spirit of the associations participating—the American Highway Association, the American Automobile Association, the Michigan State Good Roads Association, the American Bankers' Association and the American Bar Association—was a most worthy demonstration of interest and desire to advance the cause; but no more so than the co-operative spirit exemplified by Detroit, as a city, in providing her resources for the success of the Congress.

Every available means for obtaining comfort and pleasure for the visiting delegates and manufacturers' representatives was brought out. Thousands of automobiles were provided for inspection of the Wayne county roads and for special trips to the various points of interest in and about the city.

The inspection tours of the Wayne county roads were a source of exceptional interest, inasmuch as these tours provided the real demonstration of actual necessity of more extensive work of that class. Both the good and the bad were pointed out; no better object lesson could have been provided. From the famous one hundred per cent efficient concrete highways the visitors were taken over such sections of bad roads as can be found in any county, in any state, in America.

The interest manifested in the work of the Congress by the exhibiting manufacturers with materials and machinery adapted to the great cause of "better highways and more of them" was also sensed in the spirit of co-operation. Every exhibit was in the hands of competent demonstrators who were at all times alive to the importance of the promotional possibilities of the Congress. The above illustrations convey in a general way the broad scope of these exhibits. Nearly every modern appliance and material was included in these exhibits. Many of the larger manufacturers entertained extensively throughout the five days of the Congress. The Universal Portland Cement Co., of Chicago, held "open house" at the Pontchartrain hotel, where daily luncheons were served to all visitors. The participants in this epoch-making good roads Congress will undoubtedly recall with pleasure the many courtesies extended in a co-operative spirit by the manufacturers and their representatives who conducted the exhibits.

LOGAN WALLER PAGE, PRESIDENT, AMERICAN HIGHWAY ASSOCIATION, WASHINGTON, D. C.

Sessions Opened by President Page.

The opening session of the Congress was called to order at 10:30 a. m. by Logan Waller Page, president of the American Highway Association, acting as chief executive of the Third American Good Roads Congress. After an invocation by Dr. Jos. A. Vance, pastor of the First Presbyterian Church of Detroit, Chas. B. Warren, first vice president of the Detroit Board of Commerce, welcomed the delegates on behalf of the city, in the absence of Mayor Oscar B. Marx, who was unable to be present. A letter from President Woodrow Wilson stating regrets of his inability to be present, and conveying greetings to the Congress, was read by President Page. The reading of similar letters from members of President Wilson's cabinet at Washington was followed by the opening address of President Page. In this address Mr. Page said:

"In a city which, not content with paralleling the best achievements of American genius and industry, amazes the world year after year by surpassing the records of the preceding year, the American road congress has chosen to hold this great meeting which, I firmly believe, will mark an epoch in the movement for better roads throughout the United States and Canada. The welcome which the city of Detroit and the State of Michigan have given us is worthy of the finest traditions of American hospitality, and I am merely voicing the sentiment of the thousands of my colleagues who have come from every quarter of this continent when I say 'We are glad to be here.'

"Last year more than $200,000,000 went into the building of roads in this country. Eight years ago the total outlay was only about $80,000,000. Nearly all of the states have established departments of highways, but more important is the fact that we stand today upon the threshold of Federal aid to good roads.

"I have heard expressions of alarm at the magnitude of the nation's expenditures for good roads. I do not see cause for alarm in their size, but our chief concern should be to properly safeguard the expenditures. To issue 50-year bonds for roads that cannot endure more than five years is little less than criminal.

CHAS. P. LIGHT, FIELD REPRESENTATIVE, WASHINGTON, D. C.

"I am informed that last year the people of the United States spent $316,000,000 to see moving pictures. The moving picture industry is a new one. The inclination for this form of diversion is, therefore, a recent acquirement, so that we have the spectacle of the American people suddenly spending for the gratification of a whim an amount very little less than our total indebtedness for good roads throughout the entire country—an amount 60 per cent greater than the annual outlay throughout the entire land for road improvement and maintenance. If the people of the United States can spend this great sum of money without affecting in the slightest degree their prosperity or comfort, it is idle to talk of even $500,000,000 a year as a burden too great to be borne."

Other speakers at the first session of the Congress were A. G. Batchelder, chairman of the executive committee of the American Automobile Association; Judge J. M. Lowe, president of the National Old Trails Road Association, and Col. Wm. DeK. Washington of the Board of Consulting Engineers of the Highway Commission of the State of New York.

The principal speaker of the afternoon session was Secretary of Agriculture David F. Houston. Secretary Houston enthused the delegates by citing specific instances of activities of the department of agriculture of the Federal Government in connection with road-making and a discussion at length of Federal aid in road building work. In summarizing Secretary Houston said:

"To summarize, it seems to me that if Federal help is to be extended to the building and improvement of roads, it should follow, approximately, these lines:

"First, it should require the co-operation of the state in a larger measure in financial support and in construction and maintenance.

"In the second place, it should be understood that the Federal Government should have adequate supervision and control over the enterprise in each community, and guarantee the efficient expenditure of its own funds.

"In the third place, the Federal commissioner should deal exclusively with efficient agencies provided and supported by the states.

"In the fourth place, the plan should provide for the apportionment of funds among the states, on the basis of certain essential factors; and,

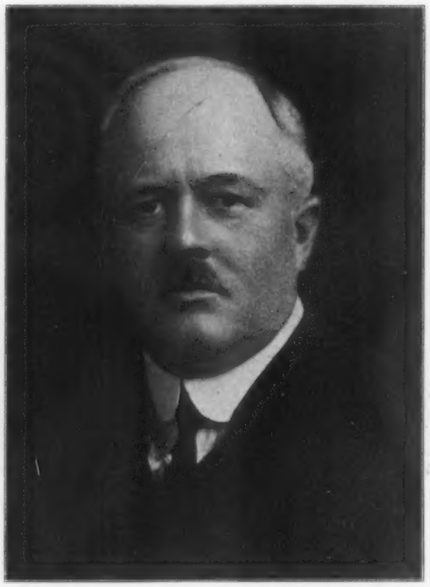
"Finally, the primary undertaking should be made to improve those community roads which are essential for the marketing of products and for the betterment of the physical, intellectual and social side of rural life."

* * * *

Secretary Houston's address was followed by the introduction of A. W. Campbell, deputy Minister of Railways and Canals of Canada, who spoke of the highway situation in that country. Mr. Campbel spoke very interestingly of the methods of procedure in the securing of government aid, to the solution of road-building problems in different Canadian provinces.

Reception and Banquet in Honor of Secretary Houston.

The Detroit Board of Commerce tendered an honorary reception to Secretary of Agriculture Houston at headquarters, 64 Lafayette boulevard, from 5 to 7 p. m. on Monday afternoon. The reception was followed by a banquet at the Hotel Ponchartrain in the evening. George T. Moody, of Detroit, was toastmaster and among the speakers were Deputy Minister A. W. Campbell, of Canada; Mayor Marx, of Detroit; Judge Roland Baggot, of Dayton, Ohio; George C. Diehl, of the American Automobile Association's Good Roads Board; J. O. Reaume, Minister of Public Works, of Ontario; Representative William P. Borland, of Missouri; Col. Wm. D. Sohier, and President William Livingston, of the Lake Carriers' Association. The reception and banquet were the main social features of the Congress and all of Detroit's distinguished guests attended.



W. T. BEATTY, CHICAGO, ILL., CHIEF OF ROAD EQUIPMENT DIVISION, FOURTH AMERICAN ROAD CONGRESS.

Discussions Result from Plans Proposed by Speakers.

The second day's sessions of the Congress were held under the auspices of the American Automobile Association, with the guidance of Chairman George C. Diehl, of the Good Roads' Board of that organization. Chairman Diehl introduced many prominent speakers during the two sessions and many discussions were participated in in a general way. The principal speaker was Congressman Dorsey W. Shackleford, of Missouri, whose plans for federal aid brought forth considerable discussion, inasmuch as his remarks were based on his opposition to road building in the interest of automobile owners. Congressman Wm. P. Borland, also of Missouri, directly opposed Congressman Shackleford's plan. At the conclusion of Mr. Borland's address Chairman Diehl named the memberships of various committees. These committees will serve as the automobile association's representatives in the American Good Roads Congress during the ensuing year.

The subjects of the Tuesday afternoon session was state road legislation and management and was held under the auspices of the American Bar Association. This session was called to order by Frederick D. Wadhams, of Albany, N. Y., who presided. All of the speakers confined their remarks to plans and suggestions for better and uniform state legislation for the securing of more extensive co-operation in road-building.

The session of Wednesday morning was devoted to construction and maintenance subjects. Papers were read by prominent engineers and builders and this session covered every phase of the many modern road building ideas. In the afternoon the meeting was divided into three sessions—the contract session, the finance session, and the economic session. At the conclusion of these sessions the Congress convened in the evening at the convention hall of the Ponchartrain hotel, where Chas. P. Light, field secretary of the American Highway Association, addressed the delegates on "Good Roads and Politics." The evening's program also included brief addresses by Geo. C. Warren, of Mass., W. C. Beatty and B. F. Affleck, of Chicago.

Report of Resolution Committee.

The Thursday's sessions were again held under the auspices of the American Automobile Association and was designated as "Road Users' Day." John N. Carlisle, of the New York State Commission of Highways, presided at the sessions after the opening remarks by Chairman Diehl. Mr. Carlisle addressed the delegates attending, describing the work of the New York state commission. Among the other prominent speakers at this session was Judge J. M. Lowe, of Kansas City. The annual meeting of the American Highway Association, in a business session, was held in the convention hall of the Ponchartrain hotel on Thursday evening. Business transacted included the appointing of the nominating committee, a resolutions committee, and the reading of the reports of the secretary and treasurer. All committee reports submitted were accepted.

The Michigan State Good Roads Association convened as the regular sessions of the Congress on Friday, this being designated "Michigan Day." President Philip T. Colgrove, of the Michigan organization presided. During the afternoon session the report of the resolutions committee of the Congress was submitted as follows:

Whereas, the loss by reason of bad roads which everywhere lessens the profits of industry, increases the cost of living and burdens business enterprise amounts to millions annually; therefore, be it

Resolved, that the American Road Congress earnestly favors the creation of a national department of public works directed by a secretary, who should be a member of the President's cabinet.

GRAND BANQUET OF THE ROAD CONGRESS, AT WHICH EVERY DELEGATE WAS HAPPY.

Resolved, that the American Road Congress favors state highway commissions and state aid for the construction and maintenance of the main roads of the several states.

Resolved, that the American Road Congress favors the establishment of a national road system and favors the construction by the states, counties and towns of the lateral and connecting market highways.

Resolved, that the American Road Congress respectfully requests the Congress of the United States to authorize the President to appoint a commission from civil life, with sufficient appropriation to make a thorough and exhaustive report on and to recommend a system of federal aid.

Resolved, that the American Road Congress respectfully petitions the Congress of the United States to adopt the necessary legislation so that the United States may hereafter be officially represented at the international roads congresses.

Resolved, that the American Road Congress favors the investigation by the United States Office of Public Roads of applications for patents affecting road and bridge construction before letters patent are issued.

Resolved, that the American Road Congress commends the Lincoln Highway Association for its efforts in seeking the establishment by popular subscription of a transcontinental highway as an enduring and useful memorial to Abraham Lincoln, and further commends the National Old Trails Association for its splendid work in the rebuilding of the Cumberland Road and the Santa Fe Trail.

Resolved, that the American Road Congress emphatically indorses the compulsory use of wide tires and road drags.

Resolved, that the American Road Congress favors, wherever practicable, the use of convicts in road construction and maintenance.

Resolved, that the American Road Congress favors long tenure in office of experienced and efficient highway officials.

Resolved, that the American Road Congress expresses its sincere thanks and appreciation to the citizens, commercial organizations and the press of the city of Detroit, of the county of Wayne and of the state of Michigan, for their hearty co-operation and generous hospitality towards this, the greatest of American road congresses.

Address of Judge J. M. Low a Feature of Closing Sessions.

One of the most interesting addresses of the Congress was made during this session by Judge J. M. Lowe, of Kansas City, on the subject of "Storm Centers to be Avoided in Campaigns for Better Roads." Many prominent members of the Michigan association addressed the meeting on various subjects, after which the committees on resolutions and nominations reported. In accordance with the report of the committee on nomination which was adopted unanimously, all of the officers of the Michigan organization were re-elected as follows: President, Philip T. Colgrove; Vice-President, N. P. Hull; Secretary, A. A. Anderson, Treasurer, J. Edward Roe.

A brief business session of the Congress was held Saturday morning, where extensions of invitations for 1914 and 1915 Congresses were presented. Invitations for the 1914 Congress were extended by the representatives of New Orleans, Denver, Atlanta and Peoria, Ill.; and for 1915 from Los Angeles, San Francisco, and Spokane.

Exposition and List of Exhibitors.

The exposition feature of the congress, which included exhibits occupying the entire main floor of the Wayne Gardens and two tents outside of the building, contained a variety of material and machenery for road building and street work. The following exhibitors occupied space:

Holt Manufacturing Co., Peoria, Ill.; American Car & Foundry Co., Detroit, Mich.; American Ingot Iron Culverts; American Steel & Wire Co., Chicago, Ill.; Anderson Tool & Supply Co., Detroit, Mich.; Association of American Portland Cement Manufacturers, Philadelphia, Pa.; Austin-Western Co., Chicago, Ill.; Baker Mfg. Co., Chicago, Ill.; R. D. Baker & Co., Detroit Mich.; Barber Asphalt Paving Co. Philadelphia, Pa.; Barrett Mfg. Co., New York, N. Y.; Bausch & Lomb Optical Co., Rochester, N. Y.; R. S. Blome Co., Chicago, Ill.; Buffalo Pitts. Co., Buffalo, N. Y.; Canada Cement Co., Toronto; Philip Carey Co., Cincinnati, Ohio; A. B. Chamberlin, New York, N. Y.; Concrete Form & Engine Co., Detroit, Mich.; Detroit Typewriter Co., Detroit Mich.; Dolarway Paving Co., New York, N. Y.; Dunn Wire-Cut-Lug Brick Co., Conneaught, O.; Eureka Machine Co., Lansing, Mich.; Gallon Iron Works Co., Gallon, Ohio; Good Roads Machinery Co., Kennett Square, Pa.; Good Roads Supply Co., Detroit, Mich.; Hall-Holmes Co., Jackson, Mich.; Hastings Pavement Co., New York, N. Y.; Robt. W. Hunt & Co., Chicago, Ill.; Chas. Hvass & Co., New York, N. Y.; Jaeger Machine Co., Columbus, Ohio; Jennison-Wright Co., Toledo, Ohio; Kent Machine Co., Kent, Ohio; Keuffel & Esser Co., Hoboken, N. J.; Knickerbocker Co., Jackson, Mich.; Marion Steam Shovel Co., Marion, Ohio; Michigan Portland Cement Manufacturers (8 companies); Milwaukee Concrete Mixer Co., Milwaukee, Wis.; Municipal Engineering & Contracting Co., Chicago, Ill.; National Paving Brick Manufacturers' Association, Cleveland, Ohio; Novo Engine Co., Lansing, Mich.; Original Gas Engine Co., Lansing, Mich.; Orenstein, Arthur Koppel Co., Koppel, Pa.; Port Huron Engine & Thresher Co., Port Huron, Mich.; Portsmouth Culvert Co., Portsmouth, Ohio; Rapid Mixer Co., Grand Rapids, Mich.; Robeson Process Co., Pennington, N. J.; Rumely Products Co., La Porte, Ind.; Shannon Self-Locking Metal Culvert Co., Cincinnati, Ohio; Standard Oil Co., Chicago, Ill.; Steel Protected Concrete Co., Philadelphia, Pa.; Tarrant Mfg. Co., Saratoga Springs, N. Y.; Texas Co., New York, N. Y.; Thomas Steel Reinforcement Co., Detroit, Mich.; Troy Wagon Works, Troy, Ohio; Trussed Concrete Steel Co., Detroit, Mich.; United States Asphalt Refining Co., New York, N. Y.; United States Cast Iron Pipe & Foundry Co., Burlington, N. J.; Universal Portland Cement Co., Chicago, Ill.; Van Duzen, Roys & Co., Columbus, Ohio; Wallis Tractor Co., Cleveland, Ohio; Warner-Quinlan Co., New York, N. Y.; Warren Brothers Co., Boston, Mass.; Wheeling Mold & Foundry Co., Wheeling, W. Va.; Whitman Agricultural Co., St. Louis, Mo.

Road Congress Side Lights.

A. Acton Hall of Piqua, Ohio, president of the Interstate Stone Manufacturers' Association, and L. W. Hoblitz of Toledo, Ohio, secretary of the same association, were at the Roads Congress at Detroit, watching the paving determinator tramping out the comparison between concrete pavements and brick pavements. This exhibit was under the personal direction of Mr. Chub of the Universal Portland Cement Co., and was continued throughout the Road Congress at Detroit. It was one of the exhibits of principal interest to the practical road builders who were there; in fact, the practical road builders spent more of their time among the exhibits than they did at the sessions of the Congress.

* * * *

The Orenstein-Arthur Koppel Co., had an exhibit at the Detroit Road Congress of model cars and industrial track that always attracted a crowd, and there was a little impromptu session of the ROCK PRODUCTS family on several occasions during the meeting around the Koppel booth.

* * * *

Logan Waller Page, the government road expert, was properly honored with re-election by the road representatives of the nation at Detroit.

* * * *

J. C. Van Doran, chief of the Minneapolis branch of the Universal Portland Cement Co., came to the Detroit Road Congress with the entire delegation from the northwest. Van is a magnate that always attracts a crowd at his heels.

* * * *

Col. Washington of the Engineering Bureau of the New York Department tested the perfection of Wayne county's concrete roads under the direction of W. M. Kinney of the Engineering Department of the Universal Portland Cement Co. After showing him the concrete roads, Kinney hiked the automobile over the Wayne county roads, of the nature-made type, and the colonel is doubtless convinced.

Percy H. Wilson and Louis R. Ferguson, representing the Association of American Portland Cement Manufacturers, operated autos during the Detroit Road Congress, with which they industriously showed the Wayne county roads to the visiting delegates and created a pleasant diversion and at the same time a convincing argument for the concrete roads.

* * * *

Col. Chas. P. Light, field secretary of the American Road Congress, was in the height of his glory during the Detroit meeting, among the 4,000 and odd delegates who were all interested in the great work that he is doing.

* * * *

Chas. L. Johnson, irrepressible, ever smiling and happy was the Atlas representative at the Roads Congress. Charley always makes his presence felt for he is a mixer and a worker beyond compare.

* * * *

The Good Roads Construction Co., 518 Monadnock Block, Chicago, is a new concern in the general paving contracting business. Arthur S. Lewis, formerly superintendent of Lincoln Park, Chicago, is the general manager of the concern. During his Lincoln Park connection Mr. Lewis made a world wide reputation as a paving expert by reason of his studies in Chicago's most beautiful park.

* * * *

Ralph Heller of the Heller Bros. Co., Youngstown, Ohio, enjoys the distinction of being the only general contractor in the thriving Ohio city. Among his recent contracts are the New City Hall, the South Side High School and the Grace Avenue School. Mr. Heller is an ambitious young man, an educated engineer and has an engaging personality which promises a large measure of success for him.

TYPE OF EFFICIENT ROAD BUILDING MACHINERY E XHIBITED AT ROAD CONGRESS—ARROW INDICATES METHOD OF FEEDING MATERIALS TO MIXER.

CLAY

TERRA COTTA MAKERS IN SESSION

National Society Meets in Denver and Plans Increased Factory Output—Launch Campaign to Show Value of Building Material.

About twenty-five members of the National Terra Cotta Society, representing practically all the plants in the United States, met in the Albany hotel, Denver, Colo., September 12 and 13, this being the first annual convention of the organization. The society is made up of the officers of the terra cotta plants of the country, and as there are only about twenty-five such plants in this country, the gathering was necessarily small, but is composed of capable business men and represents great investments.

The opening session of the convention was given over to a consideration of getting out a technical text book for the use of terra cotta workers. A resolution was passed to publish such a text book, the same to be placed in every college and university of the country in which architecture is taught, and to also issue a series of books on terra cotta with regard to its use on schools, churches and public buildings, to be placed in the hands of every registered architect in the country.

"The terra cotta industry in the United States is coming to the front wonderfully and in a few years this country will be one of the leading nations in the production of terra cotta," said P. C. Olsen, of New York, one of the prominent visitors who attended the convention.

"The terra cotta industry in this country only started in 1876, when there was one plant in existence, the Northwestern, in Chicago. The number has increased to twenty-five, of which the majority do a business of, on an average, $1,500,000 a year. The business in the country has trebled in the last fifteen years, and in a few years we are going to be one of the leading exporting nations of the world in this product, instead of having stuff constantly imported as we have had to do since the beginning of the industry. Already we have begun exporting to Cape Town, South Africa."

Colorado clay for use in terra cotta work was lauded by the visiting terra cotta men as among the best in the country, and it is predicted that the industry will expand to take in all the Western country between that state and California.

A campaign to advertise the many different uses to which terra cotta may be put and the cheapness and durability of the substance, was launched at the morning session. Terra cotta, according to the men attending the convention, can be put to nearly every use imaginable from fireproofing a roof to constructing an artistic piece of pottery or ornamenting the facade of a great public building, and is especially desirable because of its indestructibility.

In the afternoon the entire group took an automobile tour of the city, conducted by the local terra cotta men.

A banquet was given the visitors at the Albany hotel in the evening, where a speech of welcome was made by Mayor James M. Perkins, of Denver. The response was by Fritz Wagner, of Chicago, Ill., president of the society, and introductory remarks by Thomas F. Armstrong, of Philadelphia, toastmaster.

A resolution of thanks was tendered to the city of Denver, the mayor and the hotel management for the warmth of their greeting and hospitality.

F. E. Edbrooke, of Denver, an architect, addressed the banqueters and three papers were read—"Epistle of the Mountain to the Tribe of Terra Cotta," by W. E. Dennison, of San Francisco, Cal.; "One More Yell on Costs," by W. D. Gates, of Chicago, Ill., and "Other Fellows," by Paul S. Macmichael, of Auburn, Wash.

The business sessions were interspersed by trips over the Denver & Rio Grande to Pike's Peak and a trip over the Moffat road to Corona, at which the delegates were the guests of the Denver Motor Club and the Country Club.

The visitors present represented a gross annual output of approximately $37,500,000. Within the last fifteen years the output of terra cotta for building purposes has been tripled and the National Terra Cotta Society is making persistent endeavors to further increase the use of this material.

The officers of the organization are F. Fritz Von Wagner, president; Thomas F. Armstrong, vice-president; W. D. Gates, secretary, and E. V. Eskeson, treasurer.

CLAY-WORKING INDUSTRIES

Susbstantial Gains Listed—Terra Cotta Important Feature—Brick and Tile Increase in Quantity and Value—Vitrified Brick and Drain Tile Slightly Under Last Year's Figures.

The year 1912 in the clay-working industries was one of considerable progress in many respects, the total value of all clay products marketed in the year being $172,811,275, compared with $162,236,181 in 1911, an increase of $10,575,094, or 6.52 per cent. Compared with the value of the clay products of 1910, hitherto the year of maximum value, the value in 1912 increased $2,695,301, or 1.58 per cent; compared with 1909, the increase was $6,490,062, or 3.90 per cent; and compared with 1908, the year of general business depression, the increase was $39,613,513, or 29.74 per cent.

Of the two great divisions of the industry (1) brick and tile and (2) pottery, the former showed the larger increase, both actual and proportionate. The increase in the brick industry was $8,589,490, or 6.73 per cent; the increase in the pottery industry was $1,985,604, or 5.75 per cent.

The most important features in the industries in 1912 were the large increase in the value of architectural terra cotta, and also of the brick from the Hudson River region, the large decrease in drain-tile, and the excellent condition of the pottery industry. Efforts to improve the quality of all varieties of clay goods, from common brick to the highest-grade pottery, are constantly being made by the clay workers of the country, as is evinced by the new shades and texture of building brick, the new forms of hollow building tile or block, and the new effects in terra cotta that are being put on the market, and by a general improvement in the higher grades of pottery.

In the brick and tile industry increase was shown in the quantity and value of common brick, in the quantity and value of front brick, in the value of fancy or ornamental brick, in the value of sewer pipe, of architectural terra cotta, fireproofing, tile (not drain), and in the quantity and value of fire brick. Decrease was recorded in the quantity and value of vitrified paving brick, in the value of enameled brick, of draintile, stove lining, and the miscellaneous items. The increase in the quantity of common brick was less than 1 (0.94) per cent over 1911, but owing to the higher prices prevailing in 1912 for this variety of brick the gain in value was disproportionately greater—3.83 per cent.

The largest decrease sustained by any product was in the drain-tile industry—$816,064, or 9.25 per cent, and the largest increase was in architectural terra cotta—$2,562,635, or 42.58 per cent.

Fire brick being used almost exclusively in the

Value of the products of clay in the United States in 1911 and 1912, by States and Territories.

State or Territory.	1911			1912		
	Brick and tile.	Pottery.	Total.	Brick and tile.	Pottery.	Total.
Alabama	$1,918,606	$28,496	$1,947,102	$1,912,966	$22,213	$1,935,179
Arizona	106,882	.....	106,882	178,564	.....	178,564
Arkansas	465,143	15,500	480,643	433,648	28,957	462,605
California	4,757,530	158,336	4,915,866	5,692,797	219,653	5,912,450
Colorado	1,566,636	40,073	1,606,709	1,396,147	41,247	1,437,394
Connecticut and Rhode Island	1,257,339	(a)	1,257,339	1,465,000	(a)	1,465,000
Delaware	200,610	.....	200,610	162,216	.....	162,216
District of Columbia	227,520	(a)	227,520	217,486	(a)	217,486
Florida	217,535	.....	217,535	272,766	.....	272,766
Georgia	2,612,050	24,330	2,636,380	2,787,484	19,057	2,806,541
Idaho and Nevada	198,479	.....	198,479	176,108	.....	176,108
Illinois	13,353,200	979,811	14,333,011	14,279,039	931,951	15,210,990
Indiana	5,996,034	1,004,737	7,000,771	6,858,149	1,077,102	7,935,251
Iowa	4,396,555	36,319	4,432,874	4,492,185	30,141	4,522,326
Kansas	2,360,262	(a)	2,360,262	2,036,500	(a)	2,036,500
Kentucky	2,254,000	114,094	2,368,094	2,329,536	114,204	2,443,740
Louisiana	531,949	(a)	531,949	523,643	(a)	523,643
Maine	619,214	(a)	619,214	534,101	(a)	534,101
Maryland	1,518,023	254,411	1,772,434	1,681,042	184,711	1,865,753
Massachusetts	1,471,761	228,526	1,700,287	1,515,067	252,099	1,767,166
Michigan	1,953,442	130,490	2,083,932	2,350,606	194,892	2,545,498
Minnesota	1,693,478	(a)	1,693,478	1,611,040	(a)	1,611,040
Mississippi	664,176	23,660	687,836	589,093	12,706	601,799
Missouri	6,269,145	5,208	6,274,353	6,409,346	3,515	6,412,861
Montana	260,547	(a)	260,547	314,017	(a)	314,017
Nebraska	795,894	.....	795,894	805,398	.....	805,398
New Hampshire	430,748	(a)	430,748	492,096	(a)	492,096
New Jersey	9,776,287	8,401,941	18,178,228	10,902,633	8,935,920	19,838,553
New Mexico	174,651	(a)	174,651	185,575	.....	185,575
New York	8,006,012	2,178,364	10,184,376	9,653,326	2,405,532	12,058,858
North Carolina	1,271,570	8,556	1,280,126	1,456,703	8,950	1,465,653
North Dakota	210,616	.....	210,616	231,245	.....	231,245
Ohio	17,888,630	14,775,265	32,663,895	19,302,773	15,508,735	34,811,508
Oklahoma	756,639	.....	756,639	535,318	.....	535,318
Oregon	1,081,025	(a)	1,081,025	734,226	(a)	734,226
Pennsylvania	18,113,216	2,156,817	20,270,033	19,408,681	2,128,540	21,537,221
Porto Rico	19,528	(a)	19,528	14,294	(a)	14,294
South Carolina	663,674	6,120	669,794	697,802	6,761	704,563
South Dakota	61,365	.....	61,365	41,496	.....	41,496
Tennessee	1,187,961	197,139	1,385,100	1,327,850	173,166	1,501,016
Texas	2,527,502	132,417	2,659,919	2,739,464	146,604	2,886,068
Utah	548,955	(a)	548,955	724,978	(a)	724,978
Vermont	86,466	.....	86,466	79,266	.....	79,266
Virginia	1,726,491	13,409	1,739,900	1,874,174	(a)	1,874,174
Washington	2,840,372	(a)	2,840,372	2,388,870	(a)	2,388,870
West Virginia	1,453,218	2,880,202	4,333,420	1,410,708	3,365,166	4,775,874
Wisconsin	1,149,539	8,600	1,158,139	1,036,586	7,900	1,044,486
Wyoming	77,146	.....	77,146	45,103	.....	45,103
Other States	.....	715,739	715,739	.....	684,442	684,442
Total	127,717,621	34,518,560	162,236,181	136,307,111	36,504,164	172,811,275
Percentage of total	78.72	21.28	100.00	78.88	21.12	100.00

(a) Included in "Other States."

iron and steel and coke-making industries, its production rises and falls with the conditions of those industries, and as they progressed in 1912, so did the fire-brick industry show considerable progress.

In the pottery industry every variety of ware of the classification, except one, showed an increase, and the year was one of notable progress in every way. The value of the imports of pottery decreased over 10 per cent, and the proportion of domestic production to consumption was the highest recorded, 81.45 per cent. The exports of high-grade domestic pottery, though small, increased, and the exports of all clay products increased 36.42 per cent.

In statements to the Survey quantities are reported for common brick, front brick, vitrified paving brick, and fire brick, but not for fancy or ornamental brick or enameled brick. The average price per thousand increased 16 cents on common brick and 26 cents on vitrified paving brick; it decreased 31 cents per thousand on front brick and 29 cents on fire brick. The average value of product per firm reporting in 1912 was $40,339, compared with $35,055 in 1911.

The publicity campaign inaugurated by the brick-makers a few years ago, which was vigorously prosecuted during 1912, and the constant fight against the enormous fire loss, both have a tendency to increase the use of the products of clay, so that except in times of business depression their use is almost sure to increase. The prospects are that the year 1913 will show much greater progress in these industries than the year 1912. The great clay-products expositions of the middle West have served to call attention to the merits of burnt clay for structural and engineering purposes.

There were no strikes of importance in the clay-working industries in 1912. In Chicago there was a small strike early in the season, also in the Hudson River region. They were quickly settled, however, and had but slight, if any, influence on the industry. The scarcity of labor, however, was felt in many, if not all, sections of the country, and had a serious influence. The higher grades of ware—those that justify distant shipment by rail—suffered from a shortage of cars.

Production by States.

In the table shown on this page will be found a statement of the value of the clay products in the United States in 1911 and 1912 by states. This table shows that the brick and tile products as classified by the Survey continue to constitute approximately four-fifths and the pottery products one-fifth of the total value. These approximate proportions have been maintained for many years. Every state is a producer of burned clay. Of the territories Alaska and Hawaii reported none for 1912. A small production was reported from the District of Columbia and from Porto Rico. In Nevada and Rhode Island there was not a sufficient number of producers reporting to permit the publication of state totals without disclosing individual returns, so that statistics for these states have been combined with those of contiguous states.

Exports of Clay Products.

The exports of domestic clay products from the United States in 1912 were valued at $5,000,895, an increase of $1,335,175, or 36.4 per cent; in 1911 they increased $1,021,118, or 38.6 per cent. Of these exports, 76.45 per cent was brick and tile and 23.55 per cent was pottery. Brick and tile exports increased $1,558,757, or 68.84 per cent, in 1912.

VITRIFIED BRICK FOR COUNTRY ROADS.

The U. S. Department of Agriculture has recently issued as Bulletin 23 of the new departmental series a contribution from the Office of Public Roads, on "Vitrified Brick as a Paving Material for Country Roads."

The materials used and the process of manufacture are described, as well as methods of testing the bricks. The construction of brick roads is set forth in detail and the various steps in the process are illustrated. Especial attention is directed to the importance of proper engineering supervision.

The appendix gives the method for inspecting and testing paving brick as recommended by the American Society for Testing Materials.

CRUSHED BRICK FOR CONCRETE.

Since the fire of 1906 crushed brick has been used to a considerable extent in concrete mixtures for certain purposes, particularly in fireproofing, floors, etc., and preparations are now being made to use it on a larger scale. The brick contractors on the new city hall made an allowance in their bid for old brick in the foundations of the old city hall, but found the material too diverse in quality and size to be readily used. They have accordingly arranged to have it used in the concrete portions of the new building, and a crushing plant has been set up at the site to bring the old brick to suitable size for concrete.

Another sign of growing interest in this use of old brick is the recent incorporation of the National Burned Clay Concrete Company, with a capital of $75,000, by L. A. Steiger, S. J. Hayden and W. E. Cashman. Mr. Steiger is head of a large terra cotta and sewer pipe manufacturing concern.

National Terra Cotta Company, of Kansas City, capital, $50,000. Incorporated by Harry Stiver, A. F. Brocker and E. M. Brocker.

The Falls Brick & Tile Company, of Sheboygan, Wis., has doubled the capacity of its plant by the installation of a new Wonder brick and tile machine and considerable other equipment.

The Ringle Brick Company, of Wausau, had its kiln sheds at Ringle, Wis., destroyed by fire recently, entailing a loss of $2,000. The structure will be rebuilt at once. John Ringle, president of the company, is president of the Wisconsin Clay Manufacturers' Association.

The first creditors' meeting of the Sibley-Minge Brick Company, Birmingham, Ala., which was thrown into bankruptcy several days ago, was called by Referee in Bankruptcy Alex C. Birch for September 19. At this meeting the creditors will probably select a trustee to carry on the active management of the affairs of the concern.

The Whitewater Brick & Tile Company, a newly organized concern, has been incorporated in Whitewater, Wis., with a capital stock of $30,000. The incorporators are C. F. Rush, John C. Stier, Levi Thorne and W. L. Thorne. Officers include: President, W. L. Thorne; vice-president and general manager, C. F. Rush; secretary and treasurer, John C. Stier.

The American Building Brick Company has opened a downtown office at Cleveland, Ohio, in The Arcade at suite 113. A competent manager will be in charge and the location will be more convenient than the office at the plant for many who have business with the company. The opening of the downtown office is in line with the company's extensions to meet its growing business.

Articles of incorporation have been filed by the Montana Mineral Faced Brick Company, Bozeman, Mont.; capital stock, $100,000. The officers are W. B. Rosenberg, Bozeman, president, manager and director; A. M. Robinson, Seattle, vice president and director; C. C. Robinson, Bozeman, secretary, treasurer and director; Roy Young, Eugene, Oregon, director; James Bamber, Springhill, director.

Improvements recently effected at the brick manufacturing plant of Delatte and Lagrange, at Lake Charles, La., have increased its capacity from 25,000 brick daily to 60,000 daily. The plant is now one of the largest and best equipped of its kind in the state. The company has also purchased an additional ten acres of clay land adjoining their premises, and will go out after the trade in this part of the south.

The Hollendale Brick Yards at Hollendale, Iowa county, Wisconsin, have been taken over by capitalists of Freeport, Ill., and will be conducted under the firm name of the Clay Products Company of Freeport. The capital stock has been placed at $75,000 and officers have been elected as follows: President, H. K. Porter, Freeport; secretary-treasurer, M. C. Jenkins, Freeport; manager, A. E. Ray, Madison. The new company will manufacture general building brick, fireproof brick, fancy facing brick, silo blocks, farm tile and similar lines.

The Kansas Vitrified Brick Company has resumed the operation of its plant at Chanute, Kan., the Hydraulic Press Brick Company having had its plant leased for a period of ten years, the lease expiring April 5, 1913. The Kansas Vitrified Brick Company will continue to make the same high quality of gas-burned builders, pavers and matt-face brick in both dark and red in various shades that its predecessors had such a large demand for in several of the large cities. The company has retained the same superintendent that was in the employ of the Hydraulic Press Brick Company for several years, which alone will be a guarantee as to the quality. The common building brick manufactured by the Kansas company are a little larger and the weight the same as the ordinary common builders, which the company claims is a saving to the customer. Chas. W. Brown is president of the company, and Chas. T. Beatty is secretary and manager.

LOUISVILLE BRICK NEWS.

Louisville, Ky., Oct. 18.—Louisville brick manufacturers seem to find no trouble in getting enough work to keep them busy, in spite of the fact that there is comparatively little building going on at the present time. Practically all of the brick makers in the Falls City return optimistic reports of the amount of business on hand, as well as of that in sight.

The Louisville Brick Company recently landed one of the largest contracts let recently around Louisville, the material being required for the new eight-story warehouse of the Roach Distillery Company, one of the plants operated by the Kentucky Distilleries & Warehouse Company. About 800,000 brick will be required for this job. The company has several contracts on hand calling for 100,000 brick each, and a number of smaller jobs, all of which serve to make things look decidedly good to Joe Nevin.

The Hillenbrand Brick Manufacturing Company is running on full time, with plenty of work on hand and in sight. A number of good jobs in prospect serve to indicate that things will get even better as the season advances.

The Kentucky Vitrified Brick Company has just finished the delivery of the fireproofing material for the new National theater, which makes the latest of a long series of big jobs in and around Louisville for which the company has furnished material, the Starks building, the Inter-Southern building, the city hospital and the new Y. M. C. A. building being among the other recent jobs of size. Business has been very good with the company during the entire year, although it is quieter at present than for some time. The largest contract now on the books of the company is that for the brick and hollow fireproof tile and other fireproofing material to be used in the proposed addition to the Seelbach hotel, work on which will begin shortly. About 600,000 brick will be required.

MAGNESITE EXPORTS AWAIT CANAL.

Advices from Washington a few days ago report that the recent investigation of the magnesite mines of California by the United States Geological Survey shows that the production of this valuable mineral will achieve record proportions just as soon as the canal affords a cheap route to Europe and the Atlantic seaboard. There are numerous workable deposits of magnesite in California, but most of them are idle at present.

Outside of the State of California no magnesite is produced in commercial quantity in the United States. In 1912 the California output was 10,512 tons of crude ore, valued at $105,120, compared with 9,375 tons in 1911, valued at $75,000. The demand for the domestic product is restricted to the Pacific Coast, it being unprofitable to ship the material at present railroad freight rates to the point of largest consumption in the United States.

The principal uses of magnesite are for various refractory products, such as brick, furnace hearths and crucibles; in the form of magnesium sulphite for the whitening of wood-pulp paper; calcined for oxychloride or Sorel cement and other uses, and as refined magnesia salts.

NOT A BRICK TRUST.

The grand jury which for two weeks investigated the so-called "Brick Trust" in New York City decided a few days ago that the combination was not one in restraint of trade, as alleged, and dismissed the complaint against the Greater New York Brick Company and the twenty-nine directors of that corporation.

The investigation of the brick company has been in progress since December, 1911. First the complaint, which was lodged against the corporation by Francis M. Weeks of the D. C. Weeks & Son Company, of 1123 Broadway, was made to Attorney General Carmody. Frank M. Patterson, of 66 Liberty street, who organized the corporation, which comprises 103 Hudson Valley brick manufacturing concerns, appeared for the company from the beginning to the end of the proceedings.

The personal property of the Montello Brick Company's plant at Oaks, Pa., was sold recently at public sale for $680.20. The property consisted of bricks, wagons and other outside accessories. The majority of the property was purchased by Dr. Walter A. Riggs and Howard L. Boas, of Reading, Pa. This marks the first real steps toward disposing of the company's assets, as was decided upon a short time ago.

The plant of the Columbia Tile Company, at Grafton, W. Va., was practically destroyed by a recent fire, causing a loss of $100,000.

SAND AND GRAVEL

NATIONAL ASSOCIATION OF SAND AND GRAVEL PRODUCERS.

(Meets Annually.)

Officers.

President—F. W. Renwick, Chicago Gravel Company, 343 South Dearborn street, Chicago, Ill.

First Vice-President—H. H. Halliday, Halliday Sand Company, Cairo, Ill.

Second Vice-President—W. F. Bradley, Ohio & Michigan Sand & Gravel Company, Toledo, Ohio.

Third Vice-President—H. F. Curtis, Lyman Sand Company, Omaha, Neb.

Fourth Vice-President—Lee R. Witty, Wabash Sand & Gravel Company, Terre Haute, Ind.

Fifth Vice-President—J. J. Neary, Utica Fire Sand Company, Utica, Ill.

Treasurer—C. H. Brand, Atwood-Davis Sand Company, Chicago, Ill.

Secretary—Chas. D. Warner, Boston, Mass.

JAS. B. SEAVERNS EMBARKS IN BUSINESS.

James B. Seaverns, lately of the Stephens-Adamson Manufacturing Company, of Aurora, Ills., in the capacity of mechanical engineer for the sand and gravel washing plant department, has resigned his position to form his own organization. Mr. Seaverns' past ten years' experience in the conveying machinery line, having been employed by the foremost engineers and manufacturers in the sand and gravel line, has enabled him to gain a practical and thorough knowledge of present-day practice and requirements in modern gravel plant design. Any information or particulars pertaining to this class of engineering may be obtained by addressing communications to his offices in the Peoples Gas building, Chicago, Ill.

Eureka Sand & Gravel Corporation, of Peru, N. Y.; building materials; $10,000. Herman A. Goldschmidt, George M. Sachs, Joseph G. Eichenbaum; all of 140 Nassau street, New York.

The Whippany Sand Company, Morristown, N. J.; deal in sand and building materials; capital, $125,000. Incorporators, A. V. Robinson, Trenton; G. H. Foster, M. A. Foster, M. E. Jones, Rockaway.

JAS. B. SEAVERNS, M. E., PEOPLES GAS BLDG., CHICAGO, ILL.

LOUISVILLE SAND AND GRAVEL NEWS.

Fair Amount of Business Recorded—New Installations Noted.

Louisville, Ky., October 18.—The usual amount of fall activity in street building and sewer work, not to mention the regular run of building work and concrete, has served to keep the sand men around Louisville moving at a fairly rapid gait. Several big sewer contracts have been let lately, notably that to the Henry Bickel Company for west end sewers amounting to $178,000, and a number of blocks of streets are torn up in the downtown district for either sewer or street reconstruction; all of which is grist for the sand man's mill.

The Ohio River Sand Company, of Louisville, reports the demand for sand and gravel good from all of the usual consuming lines, and is keeping its forces very profitably employed during the fall. The company is having two large concrete tanks built at Thirtieth street and Broadway for the storage of sand and gravel in that part of the city, to serve as a distributing station, the object being to avoid the long haul now necessary. The National Concrete Construction Company is doing the work. A siding will deliver the material to a pit beneath the tanks, and elevated by conveying machinery. It will be unloaded by means of hoppers.

The Nugent Sand Company has handled a fair amount of business during the fall, although the dullness of building has had its effect upon this company. The prospect for considerable activity in all lines, however, appeals to the company as good, and it is looking for a marked change in conditions before long.

Andrew Hoertz, a well-known sand man of Louisville, is doing very nicely just now, having on hand a sufficient volume of business to keep his teams and men well employed. Mr. Hoertz is getting his share of the business which is available, and while he admits that things might be more active, he is entirely satisfied with his share of the work that is going around.

The Ashland Court Sand Company, operated near Ashland, Ky., by J. B. Eifort, has installed a plant capable of turning out about 400 tons of sand a day, an electric crusher being among the equipment used. The property being worked contains unlimited quantities of high-grade sand, and Mr. Eifort is optimistic about the future of the business.

PITTSBURGH SAND AND GRAVEL NEWS.

Pittsburgh, Pa., Oct. 20.—The sand companies have been fairly busy all the fall. Some of them report much more business than at any time for years. River improvements are being shoved ahead on a large scale and those concerns which got in on this business are doing very nicely. River companies have all their boats working and are having a fine kind of weather for their operations. Shipments of carload lots have been quite brisk the past month. The big downtown building projects in Pittsburgh are still taking an enormous lot of sand, which keeps up the local market.

The Indian Creek Stone, Sand & Contracting Company, of Connellsville, Pa., capital $100,000, has been organized by John Duggan, John P. Kephart, J. J. McFarland, all of Connellsville, Pa.

The dredge boat Eastern No. 1, of the Iron City Sand Company, was burned September 26th near the Jones & Laughlin bridge on the South Side. The loss is about $6,000. This was one of the best known dredge boats on the local rivers.

The Ohio River Sand Company, according to Manager J. R. McGraw, is working steadily and profitably at its plant at Ambridge, Pa., on the Ohio river, a full double turn of hands being on duty. Mr. McGraw says business is very much better than 1912. The company has been making a specialty this summer of attending with exceeding promptness to the slightest need of its customers and as a result is getting a splendid business in carload lots.

The sand plant of Frank Seymore at Portsmouth, Ohio, resumed business last week after having been idle since last summer, when it was badly damaged.

Wilbert Tate, of Sharon, Pa., and Harry Tate, of Youngstown, Ohio, have opened up a big sand bank on the Mitchell place, near Sharon, Pa. They have 40 feet of the best kind of sand for furnace work and will cart this out to the switch of the Erie railroad, which will be extended into their plant next spring.

The Rodgers Sand Company is filling some nice river contracts and is also doing considerable business in carload lots. Its boats are busy on both rivers.

SCHAFFER ENGINEERING AND EQUIPMENT COMPANY FORMED.

The Schaffer Engineering and Equipment Company has been organized and incorporated under the state laws of Ohio, for the purpose of carrying on a general engineering business, and for the purpose of developing and commercializing several new and very progressive patented systems and appliances.

The directors are: J. C. Schaffer, Roman Havlicek, Heath K. Cole, Adelbert R. Keller and Archie E. Best.

The headquarters of the company are located at Tiffin, Ohio, in which city are located its extensive offices, and facilities for producing all manner of standard and special equipment.

The engineering staff of the company is composed of high-grade engineers, men who are collectively familiar with many lines of industrial engineering, and who understand the handling of materials both in the raw state and in process of manufacture.

Individually they have proven themselves experts in economical mill and factory design, in brick and clay products manufacture, elevating and conveying, silica plants, sand and gravel plants, lime and gypsum plants, coal handling machinery, fertilizer plants, special machinery and power plants, along the most efficient labor reducing lines. They are also specialists in crushing, washing and drying of materials.

They are able to design any special device or system to meet the most uncommon and exacting conditions, and their specialty will be the remodelling and rearranging of such industrial plants as are not making the expected returns on the investment, because of incorrect engineering and equipment.

The policy of the company is to give the manufacturers of materials a simple, durable, labor-saving and profit-producing plant, as near automatic in the handling of the materials and wares as it is possible to make it.

The company controls the Schaffer patents on a new semi-continuous kiln system, a continuous clay products dryer along new and progressive lines, an automatic feeder which weighs, regulates and distributes materials in proper proportions during transit, and also several other devices for the economical washing, screening and drying of materials.

J. C. Schaffer, the president and general manager of the company, has made for himself a record in the design, construction and operation of manufacturing plants and equipment. Although he is a very progressive engineer, he is conservative in his judgment in new problems and views his work from many angles before determining upon a course of action. He is the inventor of many appliances which are in general use today. Mr. Schaffer contends, first, that poor engineering will continue as long as machinery manufacturers are expected to furnish layouts and plans for the arrangement of equipment in the factories. They have enough to do to produce correct machinery for the various

(Continued on Page 58.)

J. C. SCHAFFER, PRESIDENT, THE SCHAFFER ENGINEERING & EQUIPMENT CO., TIFFIN, OHIO.

The market place of the building material industry. Employment department, machinery wanted and for sale, etc. If your wants are not answered in this page, write a letter to this office.

THE FRANCIS PUBLISHING CO.
537 S. Dearborn Street Chicago, Illinois

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Advertisements will be inserted in this section at the following rates:

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Eight words of ordinary length make one line. Heading counts as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYMENT WANTED

WANTED—Position as superintendent of building of large lime plant. High references, long experience.
Address "Expert," care ROCK PRODUCTS

SUPERINTENDENT WANTS POSITION—Experienced in general quarrying, steam shovel and locomotive work. Am thorough mechanic, 35 years old and handle men successfully. References furnished. Address Box 948, care ROCK PRODUCTS.

WANTED—POSITION as Superintendent of lime plant. 10 years' experience; 3 years' experience in building, one year in hydrating. At present employed.
Address C R., care ROCK PRODUCTS.

WANT TO REPRESENT MANUFACTURER in San Francisco and vicinity. Technical graduate with manufacturing experience. Now employed. References.
Address Box 950, care ROCK PRODUCTS.

BUSINESS OPPORTUNITIES

CLAYWORKERS CASTINGS GREY IRON.

Foundry Castings—Prompt delivery. WM. E. DEE CO., Foundries & Machine Shops, Chicago and Harvey, Ill. All kinds of clay-workers castings, dies, dryer cars, grate bars, etc. Main office, 30 N. LaSalle St., Chicago, Ill.

FOR SALE—A one million ton deposit of high grade gypsum. Particulars on request. E. H. M., Box 266, Salt Lake City, Utah.

FOR RENT—A piece of valuable property on which are three excellent lime kilns, and in addition to this, is a quarry containing large deposits of stone suitable for concreting, etc. This property is located on three railroads. Shipments can be made via Lehigh Valley, Jersey Central or Philadelphia & Reading. Plenty of land available for storage purposes. Unsurpassed opportunity for parties wishing to engage in the building supply business. Address
L. F. GRAMMES & SONS, Allentown, Pa.

ROOF SLATE PROPERTY.

I have a fine roof slate proposition for sale. If interested, address J. M. Millikan, Greensboro, N. C.

SAND.

The largest, purest silica sand deposit in the world; coarse, sharp, white; analyzing 99.90% silica, balance moisture; on railroad, near water transportation. If interested in buying same, write R. L. MARTIN, Ocala, Fla.

FOR SALE—40 acres of the well known Grimms limestone cliff at Grimms, Wis. Address J. H. FARRELL, Wausau, Wis.

CARS & LOCOMOTIVES FOR SALE

CARS.

156—5 yard 36-inch gauge all steel Peteler 2-way dump cars, built 1910 and '11. Thoroughly overhauled. Practically good as new. The best dump cars we have ever seen. We are putting these cars on the market at bargain prices. Write us for further information.
Eight 36-inch gauge double-truck flat cars.

LOCOMOTIVES.

Eleven—12x16 Porter four-wheel saddle-tank 36-inch gauge locomotives, built 1910 and '11, and used until the end of the season 1911; practically new.
One—11x16 Pittsburg four-wheel saddle tank, 36-inch gauge.
Thirty-five 9x14 Porter four-wheel saddle tanks, 36-inch gauge. Most of these have steel cabs and were built since 1902.

STEAM SHOVELS.

Three—Marion Model 60 steam shovels, in excellent condition; ready for immediate shipment.
One—Bucyrus Model 65, with Model 70 front and applied. Thoroughly overhauled.
Two—Marion Model G shovels, in first-class condition.
Also big lot steam shovel repair parts, and other contractors' equipment.
MINNESOTA EQUIPMENT CO., Hibbing, Minn.

FOR SALE Second Hand Crushing & Grinding Machinery

CRUSHERS: 5x10-6x15-6x30 Sturtevant Fine Crushers, No. 5 Champion, 10x18 Reliance. All with Manganese Jaw plates. 12x20 Buchanan, 14x24 Blake and others.
ROLLS: 12x12-21x10-36x16 Sturtevant Balanced Rolls.
ROTARY CRUSHERS: No. 0 and No. 1 Sturtevant Fine Crushers.
GRINDING MILLS: Four 36" Sturtevant Vert. Emery Mills.
SCREENS: One Newaygo Separator, new, old model. All kinds of new crushing and road making machinery.
COMPLETE PLANTS.

RUBERT M. GAY COMPANY
114 Liberty Street, New York
FINE-CRUSHING AND GRINDING SPECIALISTS

MOTOR TRUCKS FOR SALE

MOTOR TRUCKS.

New 1½ ton Harvey trucks made in Chicago and made right; designed by the best engineers; guaranteed by a responsible firm. WM. E. DEE CO., 435 So. LaSalle St., Chicago. Works: Harvey, Ill.

PLANT FOR SALE

LIME PLANT, quarry and equipment for sale. Practically new, good working order. Exceptional bargain. Cash or easy terms. GEO. W. PLUMB, Readsboro, Vt.

FOR SALE OR RENT.

Cement Products Plant at Sioux Falls, South Dakota. 5 trunk line railroads, good territory and low material cost; equipped for drainage tile-fence posts, culverts, etc. Will rent or sell. Excellent chance. Address
Box 952, care ROCK PRODUCTS.

FOR SALE
LIME PLANT

At a sacrifice, owing to advanced age of owner. 22 acres of best Indiana limestone; four kilns; store house, etc., etc.

ADDRESS Box 417, care Rock Products

FOR SALE

Thew No. 0 Traction Steam Shovel	$2,550
Thew No. 1 Revolving Shovel, ¾-yard	3,400
Little Giant, 1-yard Traction Shovel	2,000
20 Dump Cars, 3-yard, 36" gauge @	45
Bucyrus 2½-yard Steam Shovel	3,750
No. 2 Cyclone, Mounted Steam Drill	250
Vulcan No. 4 Steam Pile Hammer	275
Vulcan No. 2 Steam Pile Hammer	375
Hayward 1-yard Standard Orange Peel	400
Hayward 1½-yard Standard Orange Peel	450
Kelly 10-ton Tandem Steam Roller	1,200
Oastler 10-ton, 3-wheel Steam Roller	900
Kelly 12-ton, 3-wheel Steam Roller	900
Lambert 7x10 D. C. D. D. Hoist and Boiler	600
Monighan 7x10 D. C. D. D. Hoist and Boiler	600
Vulcan 7x12 Dinkie 24" gauge	750
20 Western 1½-yard, 24" gauge Cars @	30

Also Stone Crushers, Air Compressors, Derricks, Pumps, Relay Rail, Rock Drills, etc.

All Goods Inspected and Guaranteed

WILLIS SHAW
1216 Peoples Gas Bldg., CHICAGO

MACHINERY WANTED

HYDRATOR WANTED—Would buy small second-hand hydrator. Must be in good condition. Address
Box 372, Danbury, Conn.

WANTED—A second-hand sand-lime brick rotary press. Capacity fifteen thousand brick or more per day. Address Box 953, care ROCK PRODUCTS.

WANTED.

One—8 or 10 Gyratory Crusher.
One—Center Crank Engine, 250 h. p.
One—Dinky Engine.
One—No. 8 Revolving Screen.
One—No. 8 Elevator.
Twelve—4 yard dump cars.
Address Box 951, care ROCK PRODUCTS.

MACHINERY FOR SALE

FOR SALE—One C. O. Bartlett & Snow Co., Direct Heat Rotary Dryer, 36"x24'. Style M. Will sell for $400.00 f. o. b. our works, blue print furnished.
WINCHESTER GRANITE BRICK CO., Winchester, Ky.

FOR QUICK SALE.

Two Vulcan Steam Shovels Nos. 1427 and 1603—85 ton 2½ yard dipper. Shovels may be inspected at Toledo. Good working condition. Quick action gets a bargain.

THE TOLEDO STONE & GLASS SAND CO.,
250 Ohio Bldg., Toledo, Ohio.

FOR SALE! IMMEDIATE DELIVERY.

1 Hanson Corliss Engine, 20 x 48 inch stroke, 375 h. p.
2 Tubular Boilers, full front, 6 ft. x 18 ft., with equipment for setting in battery.
1 Harper Heater.
1 Corliss Heater.
1 McGowan Heater.
1 Duplex Pump.
2 Single Blake Pumps.
Castings and Pulleys.
THE WILLIAMS CONTRACTORS' SUPPLY CO.,
Columbus, Ohio.

FOR SALE.

1 30 in. Sturtevant Vertical Rock Emery Mill.
1 Rotary Crusher.
Elevators, screw conveyors, line shafting containing pulleys; one $60.00 Friction Clutch included.
$400.00 for entire outfit if taken at once.
Address Box 949 care ROCK PRODUCTS.

FOR SALE—Two number 8 Krupp ball mills in first-class condition. These with other material to be disposed of on account of change of equipment. Write SECURITY CEMENT & LIME CO., Hagerstown, Md.

FOR SALE—45 h. p. Charter gasolene engine, complete with all piping and electric apparatus; engine in very good condition. BALLOU'S WHITE SAND CO., Millington, Ill.

FOR SALE
INGERSOLL-SERGEANT, CLASS J2
AIR COMPRESSOR

Belt driven cross compound. 2 stage, size 18½" x 12½" x 12". Capacity 526 ft. per 100 lbs.
Has Inter-Cooler in sub base, piston inlet, choking controller, lubricating equipment complete except air tank, code name "Juliet."
In service in excellent condition, guaranteed first class. Available October 27th.
Inspection at Hooperston, Illinois.

New Price, $1900. My Price, $900.
Address WILLIS SHAW
1216 Peoples Gas Building CHICAGO, ILL.

THE EASY WAY FOR YOU!

We are offering the following items at low prices. Don't want to carry them over the winter:

15 ton Locomotive Bucket Crane, M. C. B.
1 yd. Clam Shell Bucket.
1 yd. Orange Peel Bucket.
20 all steel End Dump Cars, 36 inch gauge, 1 yd. capacity.
20 36 inch gauge 1½ yd. wood body End Dump Cars.
1 9x14 Porter Dinkey Locomotive 36 inch gauge.
1 8x12 Porter Dinkey Locomotives standard gauge.
1 No. 2 Gates Crusher, style "D", 2 arm spider, manganese fitted.
1 No. 3 Gates Crusher, style "D", corrugated head and concaves.
1 No. 4 Gates Crusher, style "D", corrugated head and concaves.
1 D. D. 3 ton hand power Guy Derrick; mast 8"x8"x45', boom 8"x8"x40'.
1 D. D. 3 ton hand power Stiff Legged Derrick, timbers 8x8, boom 36 feet.
2 D. D. Double Purchase Hand Power Derrick.
1 S. D. Double Purchase Hand Power Derrick.
1 Saagen Stiff Legged Derrick, D. D. Hand Power.

Elevators and Screens, Pumps, Air Compressors, Stationary Engines.

WILLIS SHAW MACHINERY COMPANY, 39 SOUTH LaSALLE ST., CHICAGO

(Continued from Page 56.)

processes of manufacture and should not be burdened with field engineering; second, that there is too much energy used in selling machinery and not enough in its design and arrangement for operation in the plants; third, that there is too much "copying" after other plants and not enough originality, which cannot make for progress in any line.

Roman Havlicek, who is secretary of the company, has a wide reputation in general building design and construction, engineering on lime and gypsum mills, power plants, and is an expert in design of automatic and special machinery and electrical equipment.

Adelbert R. Keller, the treasurer; Heath K. Cole, vice president, and Archie E. Best, all of Tiffin, Ohio, are prominent in business and professional circles of their home city and northern Ohio, and are well known for their good judgment and progressive business methods.

The company will handle industrial propositions in all the various details, including inspection of properties, analyzing of raw materials, designing of factories and equipment along correct and labor reducing lines, the supervision of construction, the organization of working forces in the factories, and the designing of any special devices, machinery and equipment to meet the many varied conditions in the industrial world.

The company takes cognizance of the fact that many manufacturing plants are failing to meet the exacting conditions of the times because of the lack of correct engineering and equipment.

The Pennsylvania Glass Sand Co. will soon have another plant in operation, with a capacity of 500 tons of dry sand per day and with a storage capacity of 5,000 tons. This new plant is being erected near the Vineyard station, on the main line of the P. R. R. near Ryde, Pa., and is of iron and concrete construction. It will be electrically operated.

With the completion of the plant and screening system at the pit and the receipt of a Gramm three ton motor truck today, the Brownlee Park Gravel & Material Company, Michigan, will begin operations Monday. The company is one of the first local firms to buy expensive equipment to handle nothing but gravel. The exceedingly high quality of the gravel, however, is an incentive for extensive operations.

A report from the laboratories of the Garden City Sand & Gravel Company, of Chicago, stated the gravel to be of 90 per cent quality. The fact that the majority of the pits near Battle Creek test but 40 and 60 per cent shows what a high quality of gravel is contained at the pit.

Besides the truck itself there is a trailer of two-ton capacity, so if desired five tons of gravel may be hauled at once. A gas engine at the pit runs the hoist and screening machinery. The bin is elevated on standards so that the auto truck or wagons may back under the chute and receive the load without waste of time. The new company will cater to teamsters as well as contractors.

Fitzhugh Lime and Stone Company, Ltd., which has 320 acres of high grade limestone land in the Jasper National Park, 200 miles west of Edmonton, recently increased its authorized capital of $10,000 to $100,000 and will make numerous improvements at the plant. The company started operations with one kiln of 10 tons' daily capacity last April and will now increase its output to 50 tons daily. The new kilns are of the latest approved type. The steel shell is lined with firebrick and rests on a base of concrete, 5 feet above the ground level. There is a drawing hole in the concrete base for the removal of lime and a few feet higher are fire places. The rock is removed from the quarry in dump cars running on a track, and dumped in the top of a kiln, while the burnt lime is drawn at the bottom draw hole every four hours. The company's side trackage, a quarter of a mile in length and connecting with the main line of the Grand Trunk Pacific railway, runs within a few feet of the kiln, leaving room only for a large storage shed. No machinery is used, as the quarry floor is level with the top of the kiln, and the storage shed floor is level with the floor of the box cars into which the lime is loaded. This arrangement enables the lime to be handled at a minimum cost. The bulk of the lime is shipped to Edmonton. The officers of the company are: President, Dr. J. A. Hislop; vice president, John Hall; secretary, C. A. Hyndman; directors, L. Schuetz and J. D. Hyndman. G. Conway Brown is manager. These officers hold 95 per cent of the stock, of which not a dollar's worth has been offered to the public.

About five hundred business men of Philadelphia, among whom there were many sand and gravel men, headed by Congressman J. Hampton Moore, participated in a demonstration at Lorewood Grove, Del., on September 17, which was given to focus attention upon the great importance of the Chesapeake and Delaware Canal as a free and open commercial highway. The present owners of the canal are allowing it to fill up—possibly on account of not having sufficient revenue for proper maintenance, it is claimed, and barges now trading through the canal are obliged to load less draft than two years ago. If this condition is allowed to grow still worse, it is believed that the larger vessels trading through the canal will be obliged to withdraw, and this, of course, will mean much higher rates of freight to all Philadelphia buyers and consumers of sand, gravel and other commodities. Should the canal be made a free waterway with proper draft, it would cheapen freight rates on all these materials considerably.

The Miami Stone & Gravel Co., Cincinnati, Ohio, have taken over one-quarter of the space of the Builders' & Traders' Exchange Building; additional help and many improvements making this move necessary.

LINK-BELT CO. ISSUE INTERESTING BOOKLET.

The Link-Belt Company has just published a new booklet entitled "Link-Belt Conveyors for Sand, Stone, Gravel, etc.," an illustration of which is shown, herewith. It shows some of the company's rugged installations of continuous bucket elevators, and stone carriers and numerous equipments used by contractors and dealers throughout the country. Probably the most interesting

page to sand, stone and gravel dealers, as well as contractors, is the one showing the new Link-Belt Portable Gondola Car Unloader which it is claimed will unload a railroad car at the rate of 50 tons an hour. It is made either portable or stationary and several of these unloading equipments have already been installed in Philadelphia. Copies of the new booklet, we understand, will be mailed to interested parties on request to the Link-Belt Company, Philadelphia or Chicago.

The T. L. Smith Company, of Milwaukee, has completed the work of installing the new machinery in the Racine county gravel pit at Burlington, Wis., and the pit is now in full operation. An accident occurred during the installation of the equipment which caused the death of two men and entailed considerable delay in getting the work completed.

The Hainsport Mining & Transportation Company, of Hainesport, N. J., is completing preparations prior to opening a new gravel bank on the Rancocas Creek, at Bridgeboro, N. J. Much heavy machinery is being installed and it is expected that activities will be gotten well under way by the later part of September.

While digging, preparatory to the erection of the foundation for the new Penn Mutual Life Insurance Building, now in the course of construction at Sixth and Walnut Streets, Philadelphia, a bed of red gravel, which will be utilized in the construction of the building, was discovered. It was found that the bed extended in all directions and if dug to a sufficient depth would yield hundreds of tons, the supply being practically unlimited. Instead of hauling gravel a long distance and paying for it, one of the most needed articles in building construction is being simply dug out for a foundation and will be put back again as part of the building.

BUILDING CONSTRUCTION MORE ACTIVE

Building construction in 90 cities for September shows an increase of 5 per cent over the corresponding month a year ago. Permits were taken out in 90 cities during the month just closed, according to official reports to CONSTRUCTION NEWS, for the erection of 21,316 buildings, involving an estimated cost of $64,926,713, against 20,204 buildings at an estimated cost of $61,901,245 for the same month a year ago, an increase of 1,112 buildings and $3,225,468, or 5 per cent. This is a very satisfactory showing, as each of the past few months for a considerable period has shown a loss. The figures in detail are as follows:

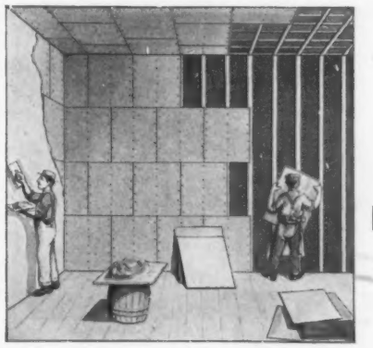
Cities.	1913 No. of Bldgs.	1913 Estimated Cost	1912 No. of Bldgs.	1912 Estimated Cost	% Gain	% Loss
Chicago	930	$ 7,858,920	969	$ 7,201,900	9	..
New York (Boros Man. and Bronx)	443	6,320,496	285	9,024,890	..	29
Boston and vicinity	456	5,237,000	356	4,476,000	17	..
Philadelphia	1,302	4,388,955	1 010	2,798,700	56	..
Brooklyn, N. Y	935	2,405,750	918	3,290,823	..	30
San Francisco	386	2,273,723	544	1,783,145	28	..
Detroit	856	2,056,855	862	1,864,900	9	..
Cleveland	1,065	1,949,545	768	1,879,315	41	..
Los Angeles	1,387	1,748,665	1,393	2,310,517	..	24
Portland, Ore.	667	1,621,005	1,185	909,595	78	..
Grand Rapids, Mich.	150	1,573,350	118	264,130	496	..
Minneapolis	608	1,449,650	530	1,211,075	79	..
Syracuse	292	1,441,613	124	390,820	268	..
Pittsburgh	238	1,434,790	308	1,343,749	6	..
Utica, N. Y.	343	1,359,223	77	367,074	373	..
St. Paul	297	910,908	201	497,646	80	..
Troy	89	920,600	45	63,389	1,686	..
Milwaukee	333	874,509	379	803,389	9	..
Cincinnati	995	869,370	928	699,340	24	..
Rochester	279	824,286	212	949,936	..	13
Buffalo	336	821,000	307	838,000	..	2
Baltimore	377	808,287	206	669,710	20	..
Washington, D. C.	359	740,886	453	841,127	..	12
Seattle	932	692,885	958	707,870	14	..
Spokane, Wash.	79	678,715	87	214,515	215	..
Indianapolis	551	675,504	447	1,000,540	..	32
Toledo	222	672,489	183	336,605	99	..
Newark	208	561,526	219	708,625	..	20
New Bedford, Mass.	115	501,000	65	137,000	265	..
Duluth	150	473,897	88	85,408	455	..
Columbus, Ohio	237	473,195	236	513,025	..	7
Dallas	165	469,925	143	351,225	34	..
Oakland, Cal.	254	456,485	389	831,440	..	45
Omaha	97	414,580	115	476,050	..	13
Worcester, Mass.	142	404,619	143	666,902	..	39
Akron	225	393,645	223	335,650	17	..
Atlanta	309	384,723	256	568,587	..	32
Hartford	103	369,421	101	437,230	..	15
San Diego	253	359,560	248	1,596,859	..	77
Sacramento	116	330,797	96	289,365	14	..
Louisville, Ky.	244	297,170	204	330,970	..	10
Charlotte, N. C.	24	292,937	26	78,210	298	..
Memphis	273	288,355	214	644,515	..	55
Fort Wayne	89	278,355	93	352,640	..	21
Youngstown	83	261,465	88	241,120	..	23
Cedar Rapids, Ia.	43	258,000	73	330,000	..	21
New Haven	94	243,880	84	325,705	..	25
Birmingham	403	242,099	263	470,249	..	48
Springfield, Mass.	112	232,085	138	1,017,090	..	77
Evansville	98	211,633	115	181,271	16	..
Savannah	68	194,740	25	30,560	537	..
New Orleans	..	186,769	..	211,170	..	11
Elizabeth, N. J.	59	182,000	28	192,890	106	..
San Antonio	358	176,139	280	151,592	16	..
Portland, Me.	32	179,000	..	51,596	247	..
Jacksonville	117	164,825	76	169,415	..	2
Tacoma	194	157,842	163	282,840	..	44
Norfolk, Va.	51	157,300	20	97,740	60	..
Berkeley	77	147,050	87	144,000	2	..
Trenton	79	144,917	73	360,885	..	59
Salt Lake City	76	142,937	69	226,375	..	36
Peoria	47	142,245	34	244,680	..	41
Pasadena	170	140,803	148	140,432	..	..
Wilkes-Barre	53	133,053	53	175,298	..	24
Des Moines	60	127,750	82	139,150	..	8
East St. Louis, Ill.	52	124,673	54	38,038	227	..
Topeka	37	113,655	69	96,110	18	..
Lincoln, Neb.	44	101,650	43	104,050	..	2
Sioux City, Ia	59	100,085	54	126,970	..	21
Richmond, Va.	34	85,883	57	303,323	..	71
Harrisburg	27	83,860	35	101,050	..	17
Holyoke, Mass.	23	79,825	14	45,990	73	..
Davenport	33	79,250	34	99,150	..	20
St. Joseph, Mo.	56	77,180	66	37,711	104	..
Altoona	74	74,551	49	39,139	90	..
Pueblo	15	74,070	19	42,878	72	..
Scranton, Pa.	53	71,420	73	152,110	..	53
Covington, Ky.	32	69,685	30	80,719	..	13
Reading, Pa.	37	69,025	55	122,825	..	43
Kansas City	30	67,140	52	56,380	19	..
South Bend	41	60,028	23	60,725	..	1
Paterson, N. J.	49	54,215	66	126,119	..	56
Springfield, Ill.	28	52,385	35	181,425	..	71
Passaic, N. J.	38	51,970	27	85,890	..	39
Chattanooga	161	50,120	187	53,480	6	..
Nashville, Tenn.	39	49,390	46	84,144	..	41
Stockton	40	44,985	35	136,525	..	66
Colorado Springs	26	35,405	34	26,500	43	..
San Jose	36	37,378	28	33,548	11	..
Hoboken	16	25,665	18	15,154	69	..
Total	21,316	$64,926,713	20,204	$61,701,245	..	..

Okauchee Gravel Co., Oconomowoc, Wis., capital $30,000; incorporators, W. S. McDowell, H. H. McDowell, Minnie L. McDowell.

T. T. Singletary, Baton Rouge, La., is promoting an organization with capital of $100,000 to develop the sand and gravel beds of Amity river, Massachusetts.

The Cape Fear Gravel Company, of Lillington, N. C., won a point before the Corporation Commission when that body lowered on all railroads the rate on gravel. The commission makes rates low under the belief that unwashed clay gravel can be hauled upon any sort of gondola and that from any view the rate should be low. The commission observes that gravel is used only in building streets and roads, each of which will aid the railroads. For these considerations the rates are made thus: For ten miles, 25 cents; twenty miles, 30 cents; thirty miles, 35 cents; forty miles, 40 cents, each additional ten miles costing 5 cents extra. The rate for 100 miles is 65 cents, 200 miles 90 cents, 400 miles $1.20. This was the petition prepared by C. C. Daniels, of Wilson.

The Decatur (Ill.) Hydraulic Sand & Gravel Co. has been organized with L. S. Baker as president.



The Modern Lath

National Brand Plaster Board is superior to wood lath because it is incombustible. Will not burn, hence resists and retards fire. It deadens sound, produces strong, firm walls and ceilings, and avoids lath cracks and stains.

It is superior to metal lath because it will not rust or corrode. Has no meshes through which flames pass to wooden frame work beneath. Finish wall is 33⅓ to 50% less expensive than one on metal lath, and much lighter.

National Brand Plaster Board is composed of plaster, wood fiber and paper, in sheets 32 by 36 inches, 5-16 to ⅜ in. thickness. Insulator of heat and cold. Saves time, labor and material.

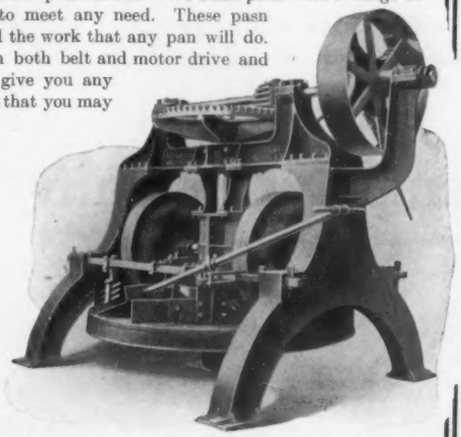
Further Information, Prices, etc., Gladly Furnished Upon Application.

The National Plaster Board Co.

Offices: CLEVELAND, OHIO — Mills: GYPSUM, OHIO

YOUR PAN NEEDS

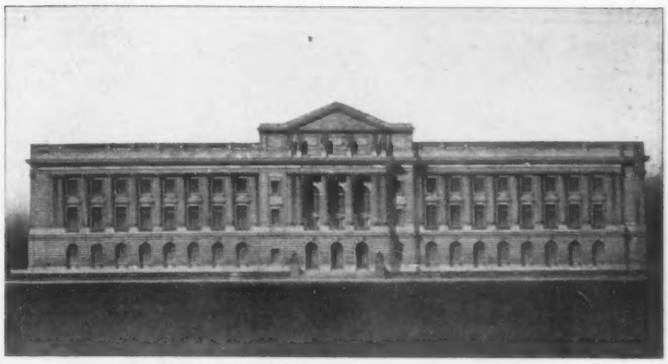
THIS pan is the identical pan required for your plant and it should speak to you convincingly of our pan quality. It has put many Sand-Lime Brick Plants on a paying basis and will make money for you. There is no line of pans made which will compare with the "Built Right, Run Right" line and your needs can be fully taken care of from our peerless line. We build pans with a range in size and capacity to meet any need. These pasn are adapted for all the work that any pan will do. We have them in both belt and motor drive and will be pleased to give you any points on our pans that you may inquire about. A poor pan is an expensive proposition. Its inefficiency shows in the quality of your product and the size of your repair bills. It also limits your capacity by handicapping the rest of the equipment. Real economy would suggest that your pans be the best possible. We will be pleased to talk pans or any other equipment with you.



We Build Complete Equipments for Sand-Lime and Clay Brick Plants

The American Clay Machinery Co.

Willoughby, Ohio, U. S. A.



THE CUYAHOGA COUNTY COURT HOUSE, CLEVELAND, O.

Twelve barrels (600 gallons) of Colored Driwal used for this new Five Million Dollar Government Building.

Perfect Waterproofing

and unlimited decorative effects are made possible by

Driwal

Driwal coatings are all *liquids* and become effective by *penetrating into* and filling the pores of the cement; thereby making it *waterproof* and *decorating* it if desired, at the same operation, *without changing the texture* of the surface.

Driwal is made in *14 colors; White, Transparent and Black.* Black Driwal is made in 3 consistencies to meet the exacting requirements in suitable *waterproofing and bonding coatings* for foundation and basement walls, reservoirs, cisterns, swimming tanks, etc. There is a Driwal coating *specially* suited for *every* condition that is met with in cement waterproofing *and* decorating.

Properly applied, Driwal *cannot* crack or peel. It does not change the surface texture. It is simple and easy to apply. *Waterproof, Weather-proof, Acid-proof, Alkali-proof.*

BILCHACO Cement Floor Coating should be used on all cement floors. It prevents dusting and oil stains, lengthens the life of the floor and gives it an attractive finish that is easily kept clean. Made in 6 colors.

Dealers Wanted

for some good unassigned territories, on exclusive sales rights basis.

Ask for Booklet No. 10 and details regarding dealer proposition, or any special information you want on above or any other protective or decorative coatings.

THE BILLINGS-CHAPIN CO.

Boston — CLEVELAND — New York

"BILCHACO" means BEST in PAINTS AND VARNISHES

The Backbone of Cleveland

is

LEHIGH

¶ The homes that house its citizens, the viaducts that connect its thoroughfares, the buildings that contain its offices and factories, the hotels, theatres and parks that entertain its visitors, and the brick pavements that bear its traffic and that of all Cuyahoga County, are bound together with Lehigh Portland Cement.

¶ The leading architects, engineers and contractors of Cleveland have used, and are using, Lehigh on the city's principal structures. This is because the even color, high tensile strength and uniformity of this cement have given such complete satisfaction in the past.

¶ A few of the structures in which Lehigh was used follow:

Leader-News Building
Clark Avenue Viaduct
Childs' Restaurant
Cleveland Ball Park
Standard Mfg. Co.'s Building
Bradley Buildings
The Belt Line
Brick Paving throughout Cuyahoga County
Dr. Allen's Residence
National Electric Lamp Co.'s Building
Central Ave. Viaduct
Power & Light Building
Pope Building
Sheriff Street Market
Otis Litho. Co.
Correction Farm & Tuberculosis Hospital

¶ The buildings of Cleveland will become still more safe as the years go by, for the strength of Lehigh increases with age.

Lehigh Portland Cement Company

(11 Mills. Over 12,000,000 Barrels Capacity)

Head Office
Allentown, Pa.

Western Office
Chicago, Ills.

Concrete Street, Niagara Falls, N. Y.

Concrete Highway Bridge, Lawrence Co., Pa.

Larkin Building, Buffalo, N. Y.
58,000 bbls. CRESCENT used.

Concrete Paving, Jefferson, Ohio
11,000 bbls. CRESCENT used

Concrete Bridge, Monessen, Pennsylvania
3,000 bbls.

CRESCENT

Oldest in America

QUALITY **SERVICE**

Established 1874

PORTLAND CEMENT

CRESCENT quality is unquestioned, therefore, needs no comment.

CRESCENT service is unsurpassed because of our excellent loading facilities, our being located on three trunk lines and the fact that our traffic department follows all shipments until delivered.

Booklets regarding various kinds of Construction furnished on request.

"Ask the Man Who Uses It"

Crescent Portland Cement Co.

Wampum, Pa.

We would like to have a talk with you—

preferably face to face, but if not that, at least a few words with you in this page—in order to impress upon you the importance of handling and using

"Superior" Portland Cement

and that this cement contains all the qualities the name implies.
"GREATER IN EXCELLENCE"—(FROM WEBSTER'S DICTIONARY.)

COLOR OF SUPERIOR CEMENT. *The color of a cement makes it pleasing or displeasing to the eye in the finished work. Superior has a light gray color which whitens with age. This makes Superior Cement a happy medium between the dizzy white and the dull gray. Its clear color is not affected by absorption, because it sets like adamant. Superior Endures.*

FINENESS OF SUPERIOR CEMENT. *Best results are obtained by the use of less Superior, owing to its dust like fineness. Hence, it is cheaper than other Portland Cements sold at the same price, because of its greater sand carrying capacity.*

HOW SUPERIOR CEMENT SETS. *It is a happy medium in this respect between the quick and the slow. Once finally set, it proceeds to harden to adamant. Being very low in magnesia, it does not disintegrate under the effects of moisture. After drying out, Superior Concrete neither expand nor contract, while their toughness and hardness resist strain and pressure without a budge. Superior Endures.*

THE SUPERIOR MILL. *Our mill at Superior, Lawrence Co., Ohio, is about as perfect a piece of mill craft as American genius can devise. It is full of big, strong, expensive machinery, which works the flinty limerock and clean shale in a way to delight any mechanic—from crusher to finishing mill. It runs night and day without cessation, handling its heavy grist like clockwork.*

THAT FREE MAGNESIA. *Magnesia in Portland Cement has always been considered a deleterious element. The fixing of the four per cent standard was not due to magnesia being deemed a beneficial ingredient in Portland Cement, but for the reason that manufacturers seemed to need those limits to be able to comply with a given specification. Superior Cement contains less than one per cent of magnesia, lowering the actual cost value to the consumer, and greatly raising the construction value. Superior Endures.*

Our Mill Is Located on Two Railroads — Insuring Prompt Shipments

Write to Us for Our Interesting Booklet and Further Information

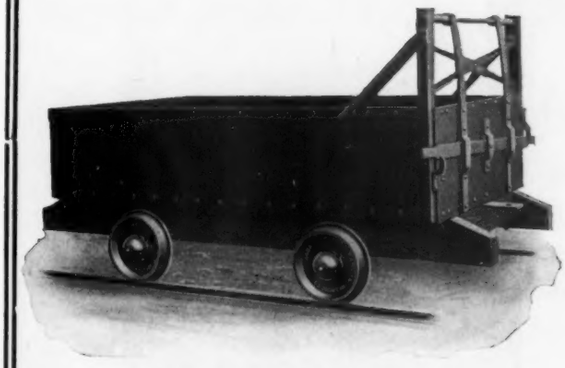
Superior Portland Cement Co.

Main Offices: CINCINNATI, OHIO

CLEVELAND AGENCY: CLEVELAND MATERIAL CO.

"Lakewood Line Cars"

In the Quarries



Lakewood Quarry Car No. 258

Two-Way Dump Cars
End Dump Cars
Rotary Scoop Cars
All Round Dump Cars
Gable Bottom Cars
Bottom Dump Cars

Lakewood Two-Way Dump Car No. 241

"LET US BE YOUR CAR ENGINEER." We will design cars for all car users without charge. Save your engineering expense and secure the benefit of Lakewood Equipment designed by experienced car engineers.

The Ohio Ceramic Engineering Co.
Cleveland, Ohio

1452 No. 50 Church St., New York. 555 W. Quincy St. Chicago. 1202 Fulton Bldg., Pittsburgh. 2622 Essex Place, Cincinnati, Ohio. A. D. Masson, 30 Nicholas St., Quebec

WIRE-CUT-LUG BLOCKS

PATENTED

The Perfect Vitrified Brick for Paving Purposes

MANUFACTURED BY

Sterling Brick Company, ... Olean, N. Y.
Danville Brick Company, ... Danville, Ill.
Wabash Clay Company, . . . Veedersburg, Ind.
Clinton Paving Brick Company, . . Clinton, Ind.
Alton Brick Company, ... Alton, Ill.
Deckman-Duty Brick Company, . . Cleveland, Ohio
Tuna Valley Pressed Brick Company, Bradford, Penna.
Foster Paving Block Company, . Bradford, Penna.
Metropolitan Paving Brick Company, . Canton, Ohio
Bessemer Limestone Company, . Youngstown, Ohio
Peebles Paving Brick Company, . Portsmouth, Ohio
Murphysboro Paving Brick Company, Murphysboro, Ill.
Binghamton Paving Block Company, Binghamton, N. Y.
Southern Clay Manufacturing Co., Chattanooga, Tenn.

For Information Address the Above Manufacturers or

THE DUNN WIRE-CUT-LUG BRICK COMPANY
(Licensor) **Conneaut, O.**

Two Books For The Dealer

They go right down to bed rock on this plastering question, giving you practical information that you can use every day in selling plastering material and in talking about it to your customers.

"PLASTERING."—Twelve pages of concise, dependable facts on this important subject, covering scratch, brown and white coat work, the different materials used, their comparative value, methods of application, etc.

"SPECIFICATIONS FOR PLASTERING."—A book of standard mixtures, carefully worked out, with explicit directions for preparing and applying to any surface, all in form for convenient reference.

Both of these books sent to any dealer without cost or obligation. Just tell your stenographer to ask for booklets "C" and "D."

"Tiger Brand" White Rock Finish

This is the name of a hydrated lime that you can afford to push and sell wherever you have a call for such a product.

These booklets are only two of the many things we are doing to help the dealer who handles **TIGER BRAND.**

Wick Residence, Youngstown, Ohio—One of the numerous fine buildings on which Tiger Brand White Rock finish has been used for Scratch, Brown and White Coat Plastering.

More architects every year are specifying this lime for white coat work on the finest jobs in the country.

It is an A-1 proposition for the dealer—easy to handle, will not spoil on your hands and will always give satisfaction to your customers.

The Kelley Island Lime & Transport Co.

Leader-News Bldg.

Cleveland, Ohio

Something New

B&B
Expansion Strip

Have You Seen It?

(PATENT ALLOWED)

A Perfect Expansion Joint for Use in All Kinds of Paving

COUNTY OF CUYAHOGA

CLEVELAND, OHIO

Office of
County Engineer and Surveyor
FRANK R. LANDER, County Engineer

A. M. FELGATE, Bridge Engineer
J. M. McCLEARY, Road Engineer

August 30, 1913.

Mr. R. L. Beck,
Arcade, City.

Dear Sir—

Answering your inquiry as to the use of the B and B Expansion Strip in the pavements of Cuyahoga County, am pleased to state that they have given uniform satisfaction wherever used by us and I do not hesitate to recommend them in any case where expansion joints are necessary.

Very truly yours,
Frank R. Lander.

Expansion and Contraction must be provided for in all pavements. **B & B EXPANSION STRIP** has solved this problem, and practically demonstrated its success in over fifty streets and county roads in Cleveland and Cuyahoga County.

B & B EXPANSION STRIP is an elastic composition manufactured in standard sizes: (four foot lengths, one half to one inch in thickness, and four to six inches in depth), with beveled ends **READY TO LAY.** It will not melt under 180° F. and is elastic at 20° below zero, making a **PERFECT EXPANSION JOINT IN WINTER AND SUMMER.** It eliminates wood strips and the pouring of hot material, requiring only one operation in its application. It saves labor and money, and assures a **PERFECT EXPANSION JOINT,** the full depth required.

It has the hearty recommendation of prominent Engineers.

Every Engineer and Contractor should know about **B & B EXPANSION STRIP.** Write for samples and prices.

Manufactured and sold by

ROBERT L. BECK

311-312 The Arcade CLEVELAND, OHIO

South Sixth Street, Terre Haute, Indiana

Nothing is required for repairs or maintenance on properly constructed brick streets or roads. This is proved by experience with brick roads built 25 years ago in accordance with our "No. 1 Directions for the Construction of Brick Pavements."
What other type of highway construction has this record of service?
Send for our "No. 1 Directions for the Construction of Brick Pavements" and "The Dependable Roadway," free on request.

National Paving Brick Manufacturers Assn.

WILL P. BLAIR, Secretary CLEVELAND, OHIO

If You Want High Grade Building Materials
and First Class Service
Deal with

The Cuyahoga Builders' Supply Company

WAREHOUSES:
No. 1—East 55th Street and C. & P. R. R.
No. 2—Woodhill and Quincy—Cleveland Short Line
No. 3—Euclid Ave., East of Collamer Y and Nickel Plate R. R.
No. 4—Hird St. and Nickel Plate R. R.

OFFICES AND DISPLAY ROOMS:
SIXTH FLOOR, SCHOFIELD BLDG.,
CLEVELAND, OHIO

Facing Bricks, Lime, Cement, Plaster,
Sewer Pipe, Building Tile, Etc.

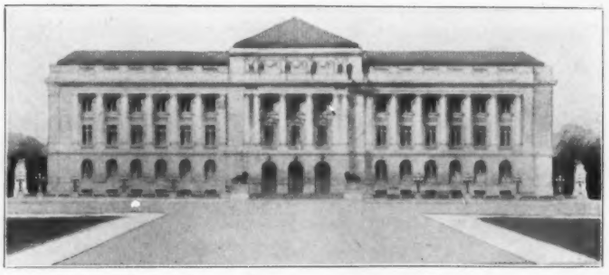
Newcastle Portland Cement

Sold Exclusively in Cleveland by

THE CUYAHOGA BUILDERS' SUPPLY CO.

Cleveland, Ohio

NEWCASTLE PORTLAND CEMENT—made from **Limestone** and **Shale Rock**—is uniform in Color, Strength, Fineness and Setting Qualities, and will pass any Standard Laboratory Test.



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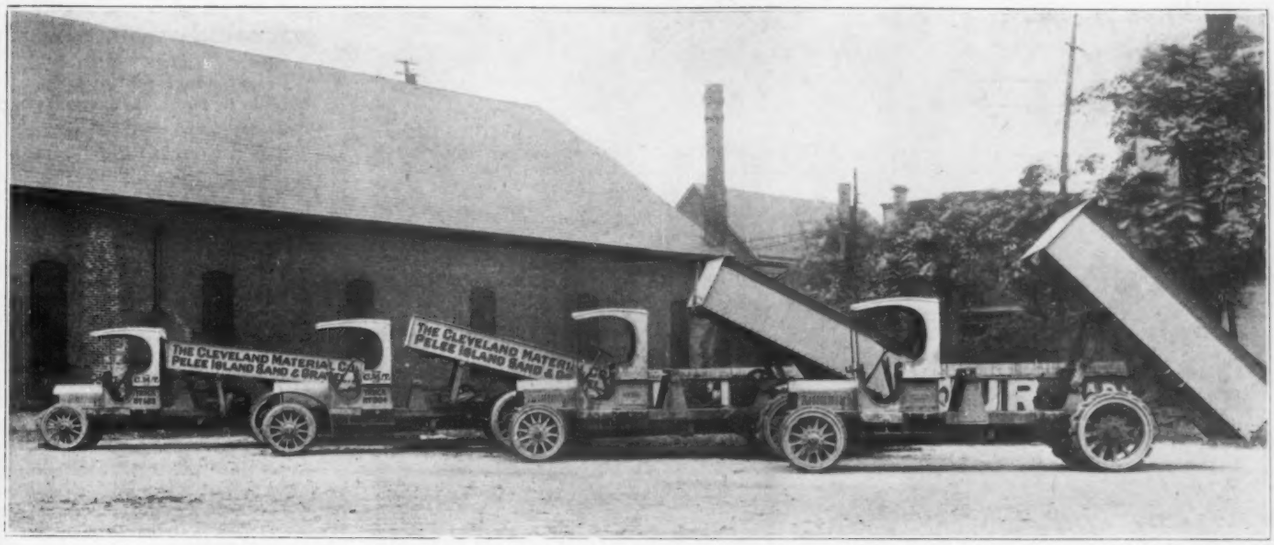

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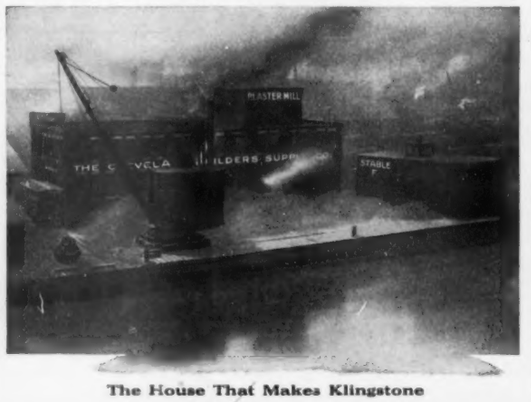

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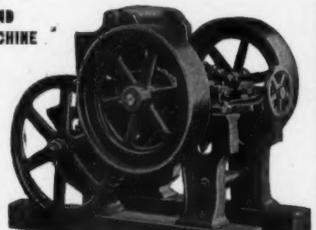
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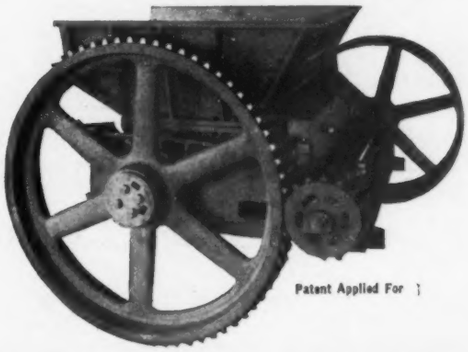

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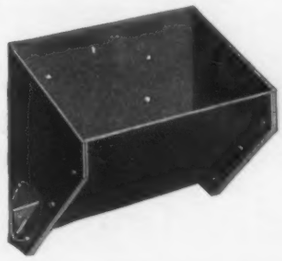

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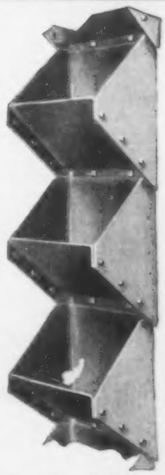

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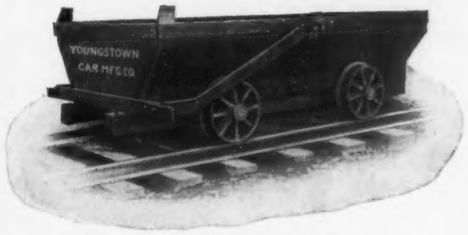

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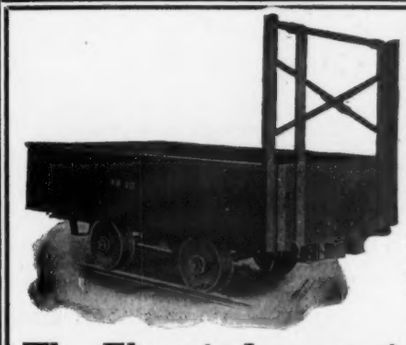

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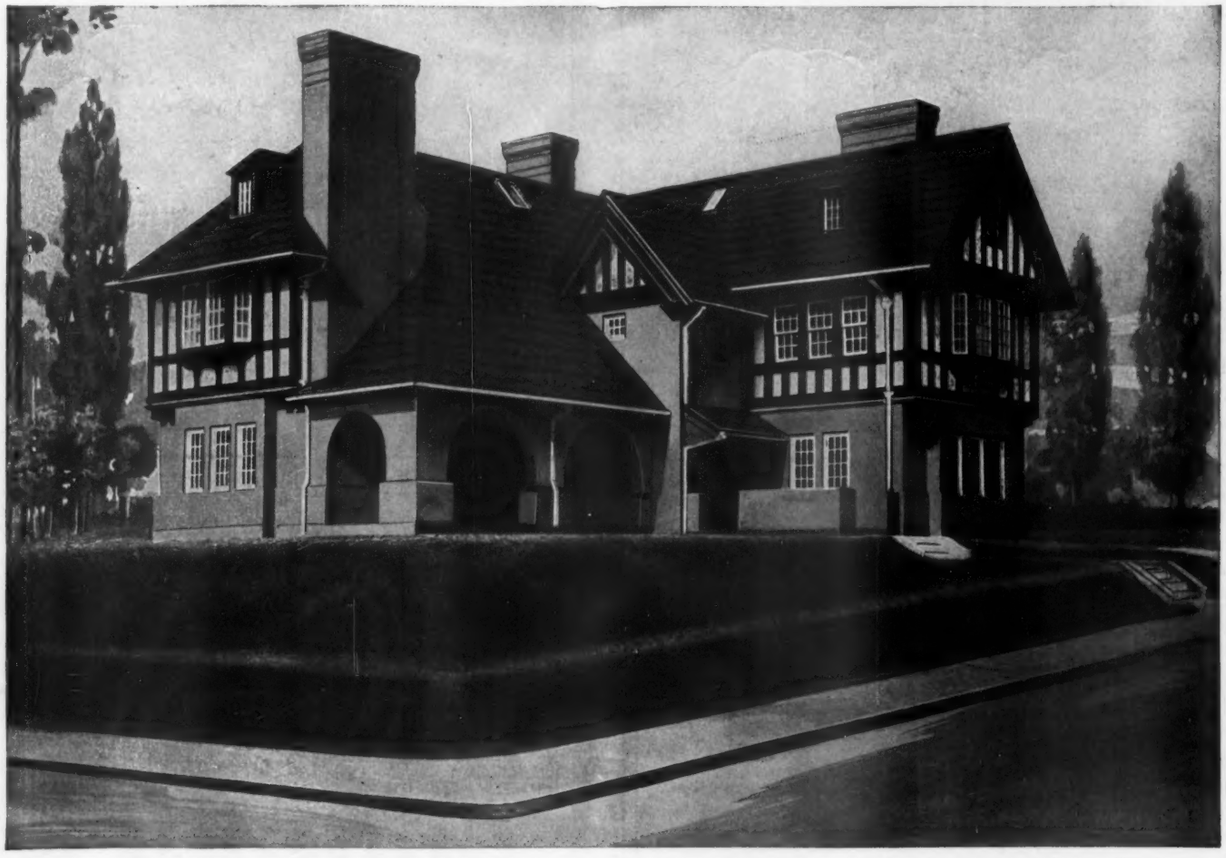

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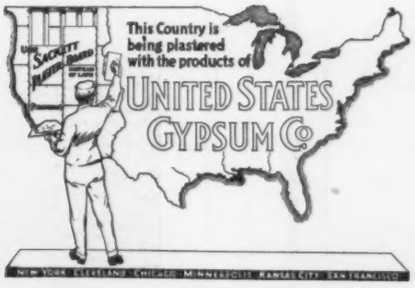

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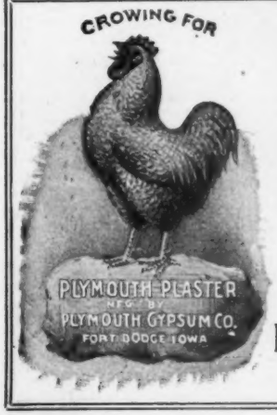

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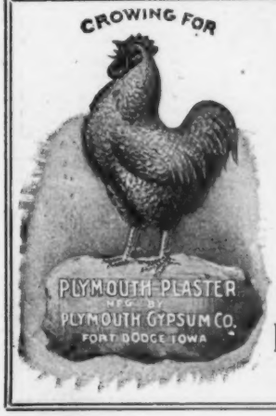

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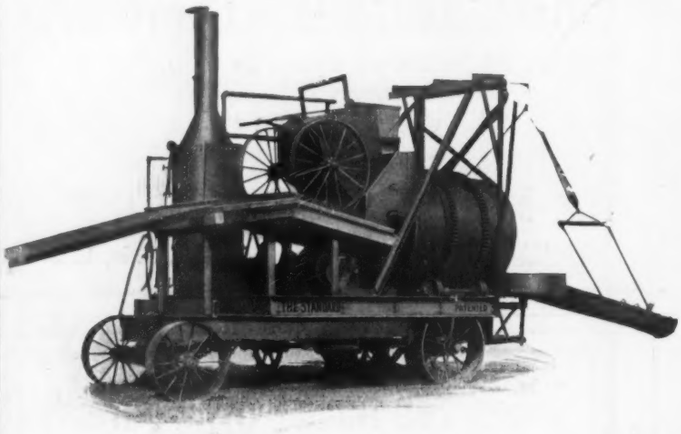

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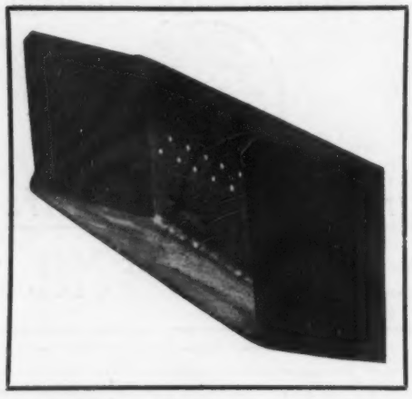

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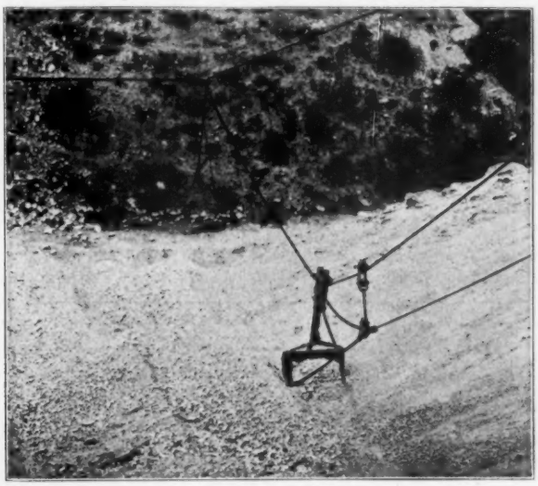

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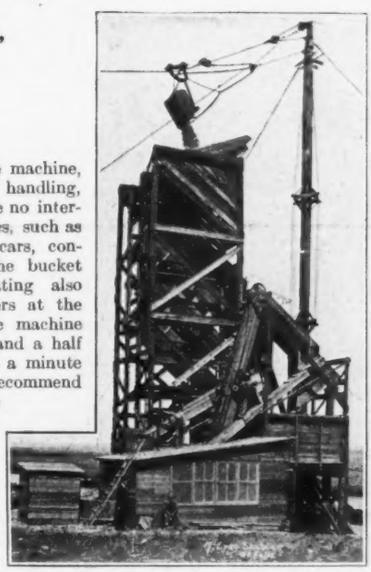

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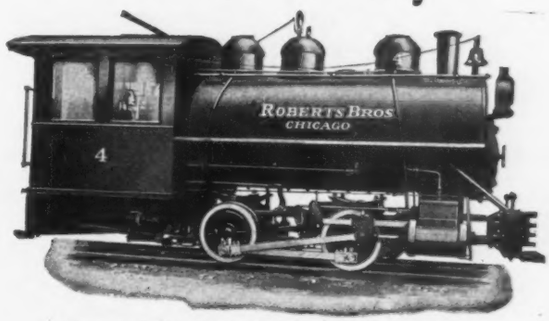

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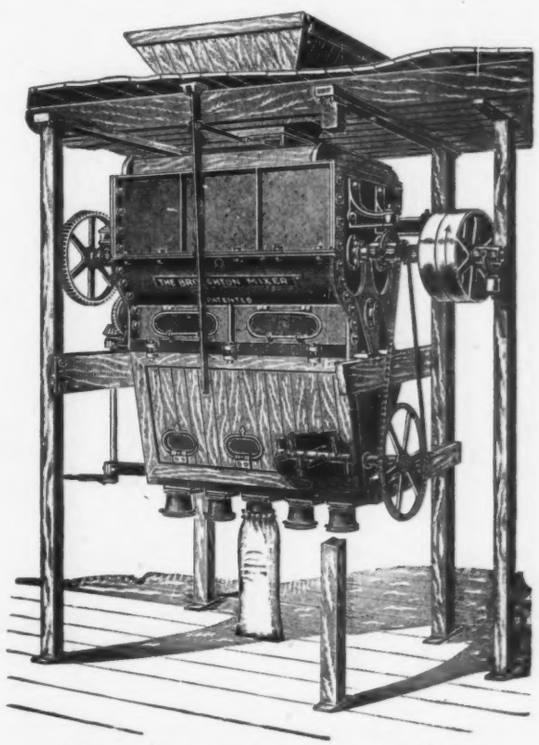

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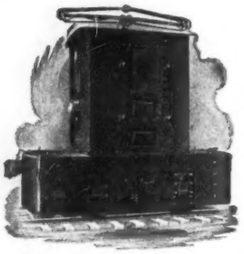

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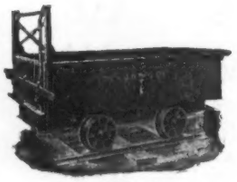

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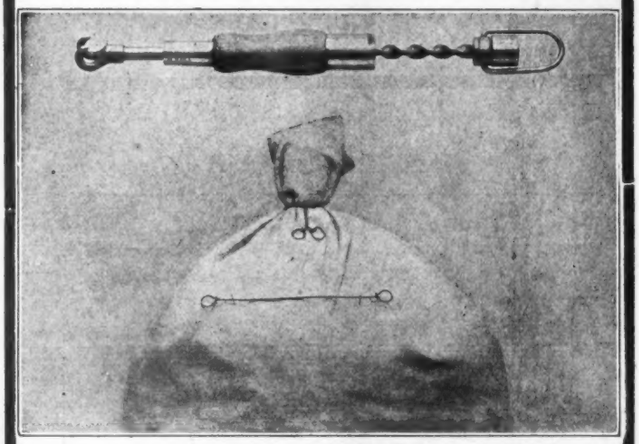

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